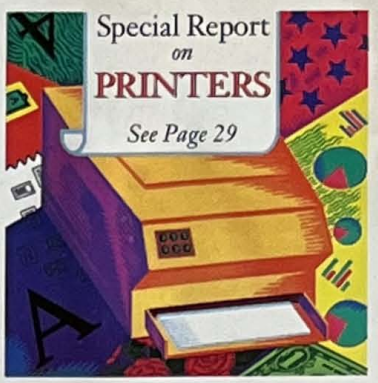
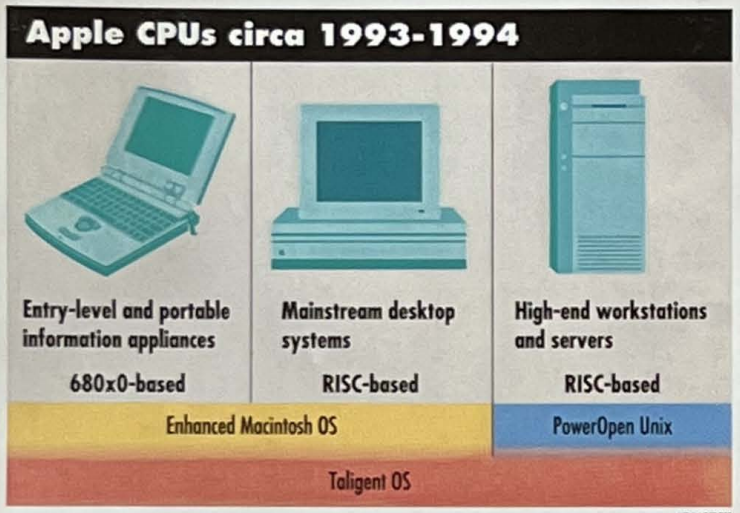
MacWEEK

10.08.91 Volume 5 Number 34 THE NEWSWEEKLY FOR MACINTOSH MANAGERS





NEVIN BERGER

Apple, IBM lay groundwork for next decade of computing

By Daniel Farber

San Francisco — Apple and IBM Corp. signed their technology alliance here last week. It was not quite a shot heard around the world, but top executives from the two companies said the occasion marked the second decade of personal computing, a renaissance of technical innovation and a dramatic change in the course of the information age.

Amid the hyperbole and endorsements from Intel Corp., Lotus Development Corp., Novell Corp. and Borland International Inc., the new partners announced the formation of two independent, jointly owned companies. Taligent will evolve Pink, Apple's object-based software project, into a new generation of platform-independent system software, and Kaleida will develop and license multimedia technologies (see story, this page).

As expected, IBM and Motorola Inc., along with Apple, will develop a family of PowerPC RISC (reduced instruction set computing) processors. The two computer companies also will collaborate on the development of PowerOpen, an open-system Unix platform combining elements of IBM's AIX and Apple's A/UX (see story, this page).

According to analysts, IBM and Apple both got what they wanted. Apple received a golden key to help unlock the corporate business market and a partner to help develop and market new foundation technologies. IBM found a champion for its RISC technology and got software jewels from Apple and an alternative to relying on Microsoft Corp.

See Alliance, Page 108

ED KASHI

"To paraphrase an old ad, you'll see why 1994 won't be like 1984," said Apple CEO John Sculley (far left). With Sculley are, from left, Jack Kuehler, president of IBM; Jim Norling, president of Motorola's Semiconductor Product Sector; Jim Cannavino, IBM vice president and general manager, Personal Systems; and Apple President Michael Spindler.

Macs in '90s: More choices

PowerPC to bring RISC to mainstream

By Henry Norr and Mitch Ratcliffe

San Francisco — Apple last week sketched the broad outlines of the Mac world of the mid-1990s, a world in which users will have a rich array of processor and operating system options.

Depending on their needs, budgets and ambitions, by 1995 users will be able to buy Macs built around either Motorola 680x0 CPUs or the PowerPC, a new family of RISC (reduced instruction set computing) processors derived from IBM Corp.'s RS/6000 technology.

At last week's joint press conference with IBM, Apple CEO John Sculley said that RISC machines "will be the mainstream Mac by the middle of the decade" and that Apple expects its models to be the highest-volume RISC systems on the market. Apple will continue to rely on Motorola's 680x0 processors in low-cost Macs and personal-information appliances.

Models based on both chip fami-

See Platforms, Page 108

New ventures eye the future

By Andrew Gore

San Francisco — Apple and IBM Corp. are counting on their two new joint ventures to create the technologies that will bring their products into the next century.

▸ **Taligent.** One of the companies, dubbed Taligent for talisman and intelligent, will take over responsibility for developing a new object-oriented operating system designed to simplify the process of creating and customizing software.

See Ventures, Page 106

Taligent

KALEIDA

Apple and IBM's joint-venture companies will be responsible for developing new operating system software and multimedia standards.

Mac to become 'preferred client'

By Margie Wylie

Cupertino, Calif. — After years of struggling for recognition in corporations loyal to Big Blue's Mac-blind vision, Apple last week finally got the endorsement it needs to help those organizations see Macs as the "perfect client."

In the only portion of the companies' vast agreement that will produce products this year, Apple and IBM Corp. announced that they would cooperate to cement the Macintosh more firmly into IBM networks with several new products and enhancements to existing products.

▸ **Token-Ring card.** Apple will

See Network, Page 106

Seybold stretches publishing purview

By Carolyn Said and Neil McManus

San Jose, Calif. — The lesson of the Seybold Computer Publishing Conference & Exposition here last week may be that the definition of "publishing" is expanding. The conference encompassed a range of ways to communicate, including multimedia and pen-based computing, as well as traditional printed media.

Seybold Seminars said, in fact, that it will drop the word "publishing" from next year's conference, to be called Seybold San Francisco.

Reflecting its broader purview, this year's Seybold could not be summed up by a single theme. At least four topics held equal sway:

▸ **Color.** The ever-evolving discussions about how to obtain precise and predictable color on the desktop seemed closer than ever to some sort of resolution. Gerry Murch, Apple director of imaging software, said the company will build in support for color management at the system level within a year.

To avoid reduced performance, system-software support will be made through extensions, similar to QuickTime multimedia. The color extensions will offer a similarly open architecture with hooks to various color-space definitions. Eventually, the system-software color extensions

See Seybold, Page 108

NEWSPAPER SECOND CLASS

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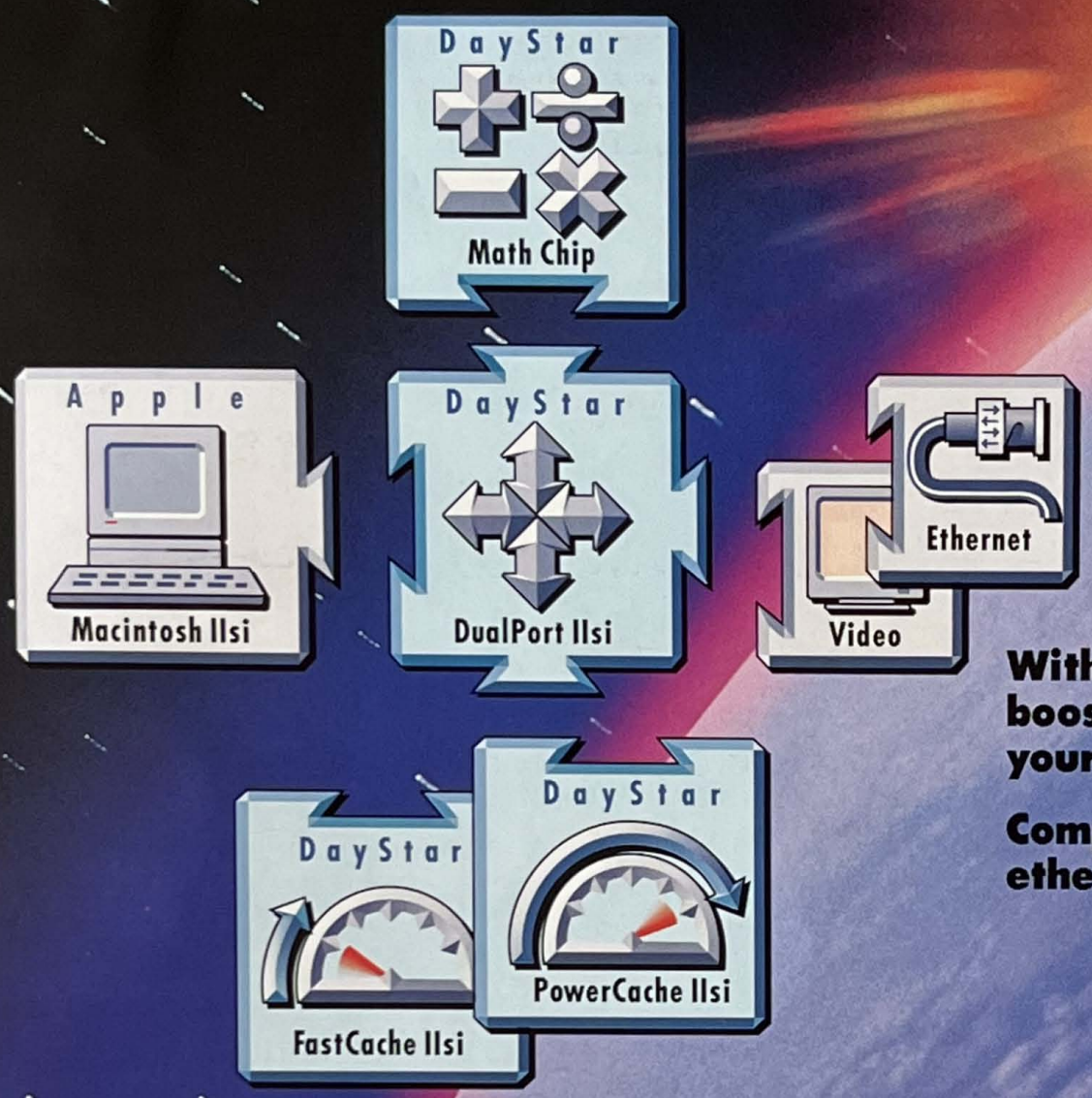

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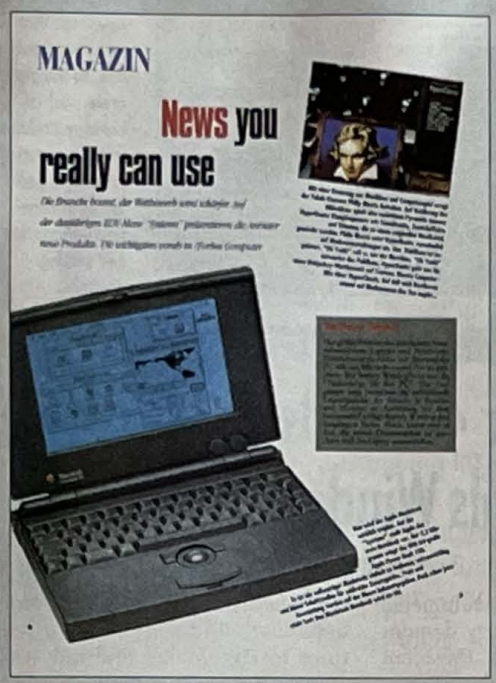
PowerBook debuts in German Forbes



!Forbes von Burda, the independently produced German version of Forbes magazine, surprised the European Mac community when it published this photo of Apple's PowerBook 100 a month before the notebook's official debut. The unauthorized photo appeared in "The 50 Best Personal Computers," a computer supplement inserted in the October issue of the German Forbes. The caption begins, "Apple Macintosh is really portable now," and ends by saying, "It is already clear that the new Macintosh notebook will be a hit."

New driver to speed lasers but not expected before spring

By Neil McManus

San Jose, Calif. — The good news is that Apple's next LaserWriter driver will speed printing on all PostScript LaserWriters up to tenfold.

The bad news is that this driver is not due until next spring, leaving owners of the new LaserWriter IIf and IIg no immediate way to take advantage of their printers' PostScript Level 2 features.

At the Seybold Computer Publishing Conference & Exposition here last week, Apple announced that it is working with Adobe Systems Inc. to rewrite the LaserWriter driver "from the ground up" to address user complaints about slow PostScript printing from the Mac.

"The bottleneck is that the Mac's Print Manager has not been able to generate PostScript data fast enough to keep up with high-speed RIPs (raster image processors)," said Michael Hopwood, product manager for Apple's Imaging Products Group.

The new drivers will allow PostScript laser printers to print text pages up to 20 percent faster and complex eight-bit images up to 10 times as fast.

The new driver will work on both PostScript Level 1 and Level 2 laser printers. Adobe will make the driver available to other PostScript printer manufacturers.

The new driver will let PostScript Level 2 printers, such as Apple's LaserWriter IIf and IIg, take advantage of Level 2 features, including image compression. Hopwood said some Level 2 features, such as forms caching, might not be included in the new driver.

In addition, the new driver will likely allow the IIf and IIg to access their built-in TrueType rasterizers, which the current driver does not support, Hopwood said. □

HP lightens price of DeskWriter, DeskJet

By Matthew Rothenberg

Palo Alto, Calif. — Hewlett-Packard Co. last week reduced the price of its HP DeskWriter and DeskJet 500, honing the printers' competitive edge against the Apple StyleWriter.

Effective immediately, the DeskWriter is $599, down from $729. The monochrome inkjet printer prints at speeds of up to 3 pages per minute, connects to the Macintosh via the serial port and ships with four scalable typefaces.

The price cut on the DeskWriter is the second since Apple introduced its StyleWriter inkjet printer (see MacWEEK, May 7), which is also $599.

The reduction also widens the price gap between the DeskWriter and the DeskWriter C, Hewlett-Packard's similarly configured color inkjet printer, introduced last month for $1,095 (see MacWEEK, Aug. 6).

In addition, Hewlett-Packard also cut the price of its HP DeskJet 500 inkjet printer to $599.

The company also introduced a high-capacity black-ink cartridge that holds twice as much ink as the original.

Hewlett-Packard Co.'s sales information group is at 19310 Pruneridge Ave., Cupertino, Calif. 95014. Phone (800) 752-0900. □

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MacWEEK (ISSN 0892-8118) is published weekly, with the exception of Jan. 1, May 28, July 2, July 9, July 23, Aug. 27, Sept. 3, Nov. 26, and Dec. 24 and 31 by Coastal Associates Publishing, L.P., One Park Ave., New York, N.Y. 10016. Single copy price including postage: $6. One-year subscription rate: U.S. $99, Canada/Mexico U.S. $150, International: U.S. $300 (airmail). All orders must be prepaid. Direct subscription inquiries to Customer Service Department, MacWEEK, c/o JCI, P.O. Box 1766, Riverton, N.J. 08077-7366; (609) 461-2100. Changes of address require that a new application be filled out completely and include both new and old address. Allow 4-6 weeks for processing. Postmaster: Send address changes to MacWEEK, P.O. Box 1766, Riverton, N.J. 08077-7366. Second-class postage paid at New York and additional mailing offices. MacWEEK is an independent journal, not affiliated with Apple Computer Inc. Apple and Macintosh are trademarks of Apple Computer Inc. Entire contents copyright 1991 Coastal Associates Publishing, L.P. All rights reserved. Material in this publication may not be reproduced in any form without permission. Request for permission should be directed to Chantal Levelanet, One Park Ave., New York, N.Y. 10016. For information on reprints in quantities of 500 or more, write Claudia Crichlow, Ziff-Davis Publishing Co., One Park Ave., New York, N.Y. 10016. MacWEEK is a registered trademark of Coastal Associates Publishing, L.P.

Envisio links monitors to notebooks

PowerBook adapters plug into internal bus

By Raines Cohen

White Bear Lake, Minn. — If you're planning to use Apple's forthcoming PowerBooks on the desktop, Envisio Inc. will have what you need: adapters for video monitors that connect to the notebooks' internal bus, rather than through the SCSI port.

Several companies, including Radius Inc., Sigma Designs Inc., RasterOps Corp. and Aura Systems, are planning external SCSI display interfaces for the PowerBooks (see MacWEEK, Sept. 10). The SCSI port's speed can be a bottleneck, however, that limits display performance.

Envisio is expected to announce two adapters as part of Apple's PowerBook introduction this month at Comdex/Fall '91, sources said.

▸ **Notebook Display Adaptor** plugs into the RAM slot of the 68000-based PowerBook 100. It drives 13-, 15-, 19- and 21-inch monochrome displays, as well as any VGA-compatible display or projection device. The PowerBook's internal screen remains active while the external display is in use.

The adapter will be offered with 1 or 2 Mbytes of on-board pseudo-static RAM, at $695 and $795, respectively. The added RAM expands the PowerBook's total memory to 3 or 4 Mbytes.

▸ **Notebook Display Adaptor 030**, an eight-bit color adapter, fits both the 68030-based PowerBook 140 and 170. In addition to supporting monochrome 13-, 15-, 19- and 21-inch displays, it can show 256 colors on 13-inch displays, including the Apple RGB Display and VGA-compatible displays and projection devices.

The adapter includes a pass-through connector that allows users to add an Apple 2- or 4-Mbyte RAM upgrade. The card will sell for $695 without memory, or $995 with 2 Mbytes of on-board RAM.

Envisio Inc. is at 5365 W. Bald Eagle Blvd., White Bear Lake, Minn. 55110. Phone (612) 653-7694; fax (612) 653-7694. □

Telebit QBlazer hits high speeds

By Nathalie Welch

Sunnyvale, Calif. — Telebit Corp. this month began shipping its QBlazer V.32 modem, providing traveling Mac users with high-speed communications in a small, easily transportable package.

Priced at $745, QBlazer measures just under 3 square inches. It can run for two hours on a 9-volt battery or be plugged into a wall outlet with the external AC adapter included with the modem.

QBlazer supports Telebit's extended AT-command set. It includes V.42 error correction as well as V.42bis and MNP 5 data compression to provide data throughput speeds reaching 38,400 bps, but can fall back to speeds of 300 bps.

The modem stores two user-definable configurations and two telephone numbers in non-volatile memory. It ships with an RS-232 cable and a coupon offering Software Ventures Corp.'s MicroPhone II for $99. The software lists for $295.

Also last month, Telebit shipped its T3000 V.32bis modem with V.42 error correction and V.42bis and MNP 5 compression. The $1,095 modem can transmit at up to 57,600 bps and supports remote configuration and diagnostics, as well as password and callback security.

Telebit Corp. is at 1315 Chesapeake Terrace, Sunnyvale, Calif. 94089. Phone (408) 734-4333; fax (408) 734-3333. □

Telebit provides a custom travel pouch for its very small-footprint QBlazer modem.

Sony Hi-8 deck records animations

By Connie Guglielmo

Las Vegas — Sony Corp. of America hopes to attract an animated audience among desktop video producers with a new Hi-8 deck that will let users record frame-accurate animations from the Macintosh.

To be introduced at Comdex/Fall '91, the new EVO-9650 is a Hi-8-format recording deck that can record Mac-generated animations frame by frame. The deck has built-in pre-roll, a feature that automatically queues the tape when recording to prevent pauses between frames.

It will be available for less than $6,000 by April 1992, according to Stephen DiFranco, manager of new application development at Sony.

Mac users will be able to control the EVO-9650 through software that supports Sony's VISCA (Video System Control Architecture), a command protocol that Apple plans to support in QuickTime (its multimedia extension to System 7.0). A frame-by-frame animation controller will not be required for MacroMind Inc.'s Director and Paracomp Inc.'s Swivel 3D, the only programs for which VISCA support has been announced.

Mac users still must convert the Mac's RGB (red, green, blue) signal to video with a video encoder before the signal can be transferred via a VISCA cable to the EVO-9650.

While there are many encoders on the market that will work with the deck, Sony plans to sell its own RGB-to-NTSC (National Television System Committee) encoder card that will slide into the EV0-9650. It also will offer options for converting the Mac's RGB signal to an S-video or composite video signal.

Sony's encoder, which should be available when the EV0-9650 ships, has not yet been priced.

Also at Comdex, Sony will offer its VBOX, a $299 box that serves as an interface between computers and Sony consumer products, with a limited version of MacroMind's $695 MediaMaker. Called MediaMaker CV, the software will import PICT files, let users arrange them in sequence, synchronize digitized sound to the PICTs and then print to video.

The VBOX/MediaMaker CV bundle will list for $399; the package will include a coupon allowing users to upgrade to the full version of MediaMaker for $249.

Sony Corp. of America is at Sony Drive, Park Ridge, N.J. 07656. Phone (201) 930-1000. □

NEC brings out new MultiSync line

By Rochelle Garner

Wood Dale, Ill. — NEC Technologies Inc. last week unveiled a new line of multifrequency color monitors featuring larger display areas, improved ergonomics and a new color-control system.

The new MultiSync FG Series line comprises four models: the 15-inch 3FGx, at $749; the $899, 15-inch 4FG; the 17-inch 5FG, priced at $1,599; and the $3,499, 21-inch 6FG. All are compatible with the Mac LC and the Macintosh II family, NEC said.

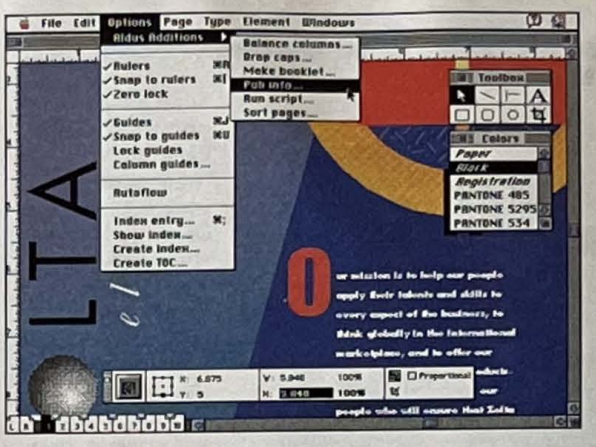
All but the 3FGx provide AccuColor Control, which lets users match on-screen colors to different output devices. Accessed through NEC's Digital Control System, a series of buttons recessed in a front panel, AccuColor lets users separately adjust red, green and blue color guns to match colors they hold up to the monitor.

All monitors support bezel-to-bezel Fullscan display. Fullscan gives the 15-inch 3FGx and 4FG up to 36 percent more active screen area than most 14-inch displays, NEC said. All meet the stringent Swedish standards governing very and extremely low-frequency (VLF and ELF) emissions.

MultiSync 3FGx is the only model in NEC's new line that does not support AccuColor Control.

NEC additionally offers an anti-static screen lens from Optical Coatings Laboratory Inc. for $79.

NEC Technologies Inc. is at 1255 Michael Drive, Wood Dale, Ill. 60191. Phone (708) 860-9500. □



Aldus PageMaker 4.2 ships with six Aldus Additions that add new capabilities to the program, such as balancing column lengths, creating drop caps, providing publication information and sorting pages.

PageMaker 4.2 folds in Additions; Aldus unveils Windows software

By Carolyn Said

San Jose, Calif. — "Multimedia PageMaker," a technology demonstration by Aldus Corp. President Paul Brainerd, made the biggest splash at the Seybold Computer Publishing Conference & Exposition here last week (see story, Page 1), but the company also had a raft of solid product announcements.

▸ **PageMaker 4.2.** As previously reported (see MacWEEK, Oct. 1), Aldus is preparing a System 7-savvy update to PageMaker that features Additions, technology that lets developers and users extend the $795 program's feature set.

Aldus said PageMaker 4.2 will ship by year-end bundled with PrePrint 1.5, its color-production tool.

Users who upgrade will receive 30 days of free support; new users will receive 90 days of free support.

Scitex America Corp. of Bedford, Mass., demonstrated Scitex Visionary/A, a set of Aldus Additions that add high-end color features to PageMaker and link it to Scitex's pre-press system.

Visionary/A will ship in the first quarter of 1992, Scitex said.

Articulate Systems Inc. of Woburn, Mass., said it will use Additions to create a Voice User Interface for users of PageMaker and Articulate's Voice Navigator II.

A host of other companies said they will develop Additions, including Altura Software Inc., AStar Technologies Inc., Compumation Inc., Dewar Information Systems, EDCO Services Inc., ElseWare Corp., Equilibrium, K-Talk Communications Inc., North Atlantic Publishing Systems Inc., Page-Ahead Software Corp., Palsoft, Parallax Productions, Publishing Revenue Partners, Virginia Systems Inc. and The Utility Co.

▸ **FreeHand 3.1.** Aldus announced a System 7-savvy version of its illustration program. To ship by year-end for $595, FreeHand 3.1 will support TrueType, publish and subscribe, balloon help, and 32-bit addressing, as well as hot links to PageMaker 4.2.

Other enhancements include support for pressure-sensitive tablets, improved element manipulation, faster editing of styles via mouse and keyboard shortcuts, the ability to export files in PICT and PICT2 formats, and new printing options providing more control over speed and accuracy.

▸ **Windows products.** Aldus unveiled FreeHand 3.0 for Windows, which will offer file compatibility with its Mac counterpart. The $595 program will ship in the fourth quarter.

The company also announced PhotoStyler 1.1, a full-color image-processing program for Windows.

Aldus acquired the program from U-Lead Systems Inc. of Taiwan in May and has been working on enhancements since then. The $795 program will ship in the fourth quarter.

Aldus Corp. is at 411 First Ave. S., Seattle, Wash. 98104-2871. Phone (206) 622-5500; fax (206) 343-4240. □

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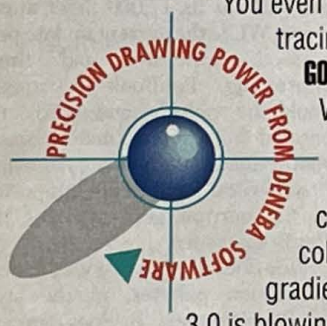

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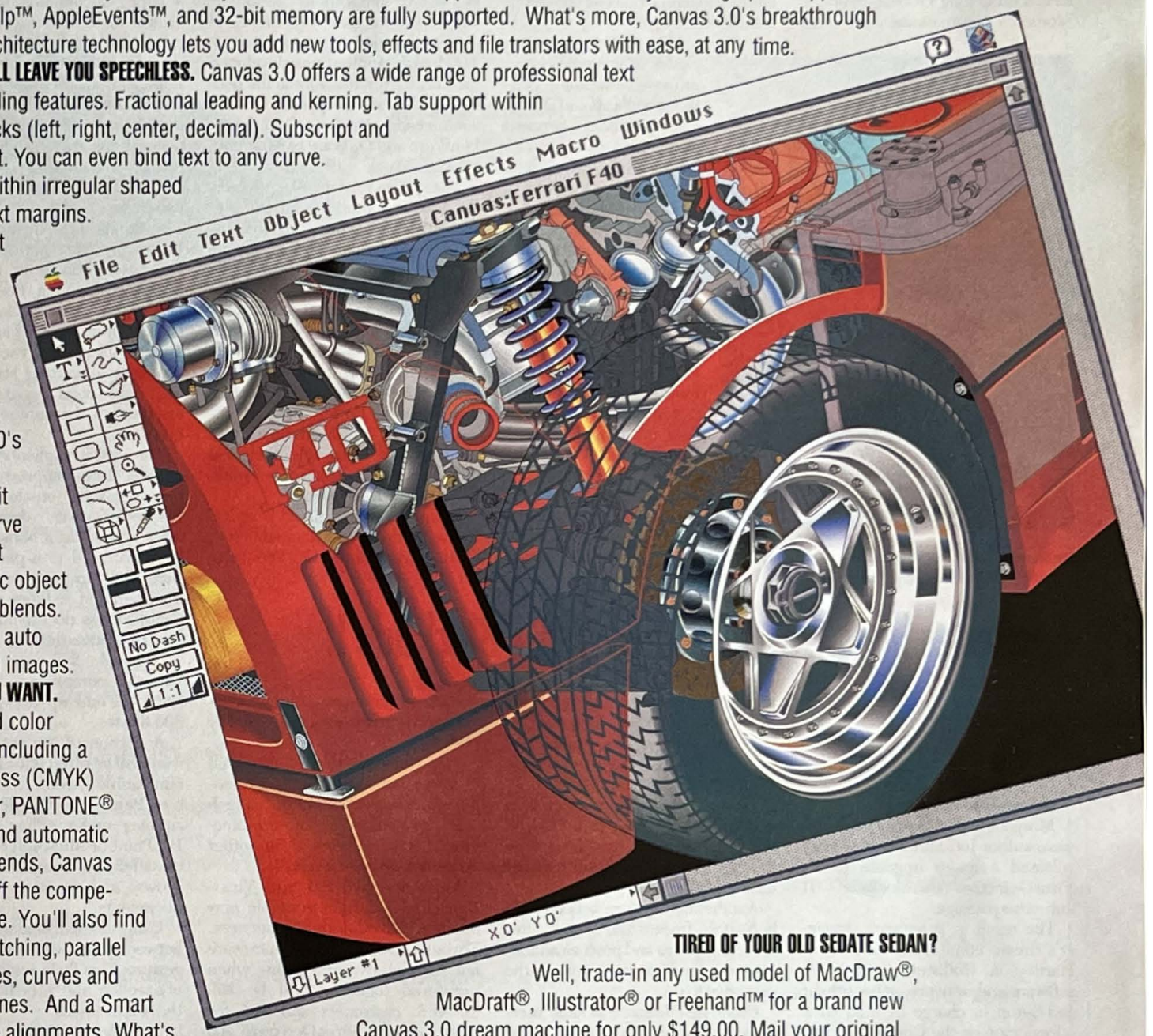

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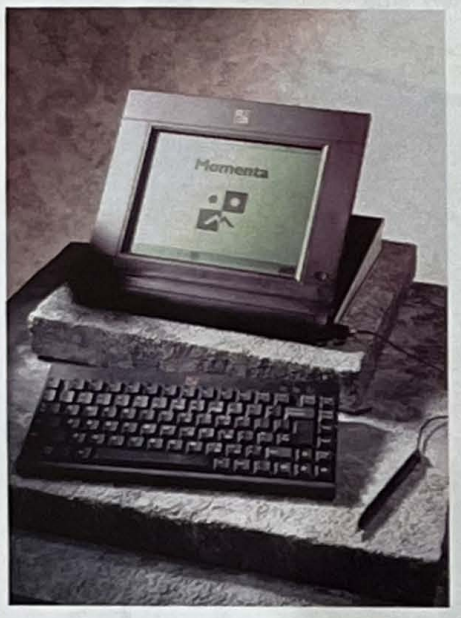
Momenta rolls out new pen system

Machine can do desktop, notebook duty

By Raines Cohen

Mountain View, Calif. — Apple has yet to step up to the starting line in pen-based computing, but the race is on among DOS contenders. Momenta International next week will ship Momenta, a pen-based system that runs DOS, Windows and Momenta's own pen-based operating system. Momenta functions as a desktop machine that can convert to a notebook system.



The Momenta notebook system uses both a pen and keyboard to run MS-DOS, Windows and pen-based applications.

The $4,995 system includes Momenta's system software, several pen-based applications (including a spreadsheet, personal information manager and fax mark-up software), a fax modem, a keyboard, and a carrying case.

The 6.1-pound, wedge-shaped Momenta machine is about the size of a three-ring notebook. It runs off-the-shelf DOS and Windows 3.0 programs and can use the built-in stylus like a mouse. The company said it will support Windows for Pen Computing when it is released.

Momenta's system runs on a 386SX microprocessor, assisted by two digital signal processors for pen control and voice input, and several custom chips for power management and other system functions. It has one serial and one parallel port; the keyboard includes two mouse ports.

The SmallTalk-based Momenta Application Development Environment makes the creation of pen-based applications easier by defining more than 400 classes of objects that developers can access. Third-party applications developed specifically for the Momenta pen-based OS are expected to be announced by San Jose, Calif.-based PenWare and O_2Ware of Mountain View, Calif.

The system runs off 10 AA batteries. Alkaline batteries power the system for about six hours; rechargeable batteries, which can charge while the system is in use, will keep it going for three to four hours.

Momenta said the system will attract a different type of buyer than the slate-type systems that NCR Corp. and others have developed based on the PenPoint operating system from Foster City, Calif.-based GO Corp. The company said its system is aimed at non-clerical office workers, rather than blue-collar in-the-field workers.

Momenta International is at 295 N. Bernardo Ave., Mountain View, Calif. 94043. Phone (415) 969-3876; fax (415) 969-3877. □

Upgrades boost VirusDetective, VirusBlockade II

DA scans during creation, editing

By Henry Norr

Morgantown, W.Va. — Shareware author Jeff Shulman last week released a major upgrade to his VirusDetective/VirusBlockade II anti-virus package.

The result is "a network manager's dream come true," said Geoff Hartley, a Hollister, Calif.-based software and networking consultant and sysop in charge of Mac virus information on the Computer Virus Industry Association's electronic bulletin board.

Along with Version 5.0 of VirusDetective, his user-configurable desk accessory, Shulman released Version 2.0 of VirusBlockade II, a control panel for configuring how, where, when and what the DA will scan. Together, he said, they protect against a variety of "hexually transmitted diseases," including worms and Trojan horses, as well as viruses.

A key new feature — one currently offered by no other virus-detection utility — is automatic scanning of files as they are created or modified. If Superfast File Scanning is enabled in the control panel, the DA checks files as they are downloaded, copied, uncompressed, created or modified. Floppies and local and networked volumes can be checked, and the software can be run on AppleShare servers, although some restrictions apply with AppleShare 2.0.1.

Depending on the settings selected, Virus Blockade can notify the user and delete, move or rename the file if it finds a resource that indicates infection.

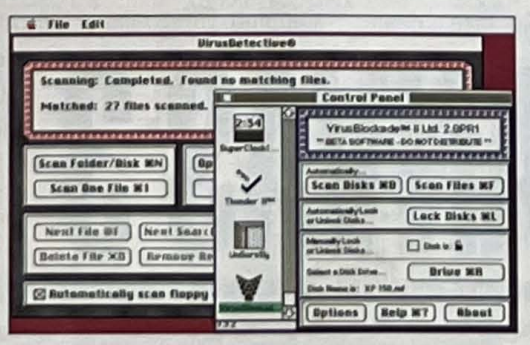
Another new feature, called Rookie Switch, freezes the system after detecting a virus and posts an administrator-edited message telling the user what to do.

Other new features include user-scheduled automatic scanning; automatic removal of infections, such as WDEF, from the desktop file; and improved interfaces and help screens. Capabilities retained from previous versions include options to lock out floppy drives, to scan floppies automatically when inserted, and to write-protect floppies and hard drives.

VirusDetective, which was the first anti-virus program that could be configured for new viruses, lets users read or paste in additional search strings. Shulman posts a string on-line whenever a new virus is discovered and notifies registered users by postcard.

"The networks that I find myself involved with are accessed by people who travel the world and as such need immediate updated protection," Hartley said. "No other updates have been faster."

VirusDetective 5.0 and VirusBlockade II 2.0 are available now on Zmac and other on-line services. Through Dec. 31, the shareware fee for the two programs, when registered together, will be $59 for U.S. customers and $64 for those abroad. VirusDetective 5.0 alone is $40 in the United States and $45 elsewhere. The programs are covered by a 30-day money-back guarantee, and site licensing is available. □



With the VirusBlockade II 2.0 control panel, users can configure VirusDetective 5.0 to scan files automatically as they are created.

Slate chalks up software to take Mac-created documents on the road

By Raines Cohen

San Jose, Calif. — When you've got a light, portable pen-based system, why carry pounds of paper documentation? That's what Slate Corp. asked last week here at the Seybold Computer Publishing Conference & Exposition when it introduced its PenBook electronic book software for pen-based computers.

The software comes in two parts:

▸ **PenBook Author.** From any Mac application, users can print to disk and create a PostScript file via Apple's LaserWriter driver. Then, in PenBook Author, users can create document sections or chapters and drag the PostScript documents into them.

The $695 application indexes and compresses the pieces to create a PenBook-format document, known as a book, which can be transferred to a pen-based system. The compression and encoding operation reduces a 1.2-Mbyte QuarkXPress document, for example, to a manageable 100 Kbytes. A typical 250-page procedure manual, comprising 93 percent text, will end up occupying about 300 Kbytes.

A version of the authoring software will be offered for IBM PC and compatible systems as well.

▸ **PenBook Reader,** software running under either GO Corp.'s PenPoint or Microsoft Corp.'s Windows for Pen Computing, lets users browse and annotate the resulting documents.

Using the pen, readers simply flick between pages with a horizontal-line gesture. Two flicks jumps to the end of a section, and three flicks jumps to the end of a book.

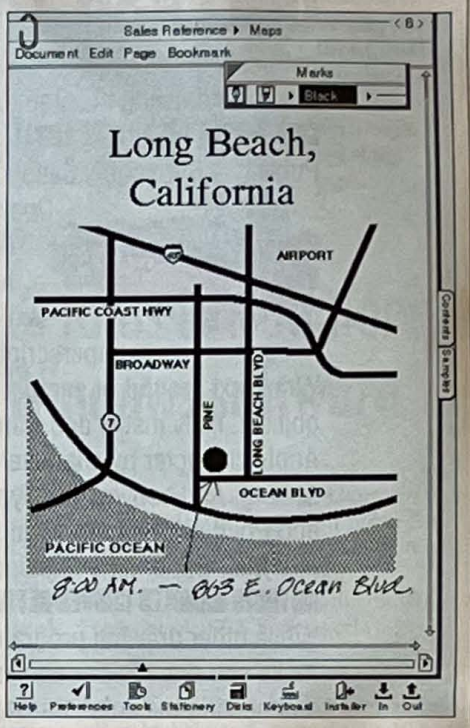
A slider bar lets users page directly to any point in the book. Readers can create visible bookmarks and return to the page with just one click. They also can search through a book for text, mark up books, and highlight or white out selected phrases.

The company said the $95 reader is due to ship in the first half of next year.

Slate currently offers its PenApps software for PenPoint, and promises a version for Windows for Pen Computing next year.

"This industry has a pretty bad habit of arguing between systems in front of our customers," said Vern Raburn, Slate CEO. "They end up deciding that either one they choose is the wrong system."

The company said the main market for the product is for corporate publishing of reference documents.



PenBook Reader users can annotate documents and can quickly navigate by making gestures with a pen.

One potential customer, an airline company, said it is considering PenBook to hold the 250-page reference material for its 17,000 flight attendants. While the current update process is expensive and time-consuming, PenBook documents could be quickly and easily recreated from source materials and redownloaded to the pen systems.

Keyboard input is not supported in the current generation of the PenBook reader.

Nor does it support independent annotation palettes, in the style of Post-it notes. It does support handwriting recognition, to the extent provided by the host operating system.

Slate Corp. is at 15035 N. 73rd St., Scottsdale, Ariz. 85260. Phone (602) 443-7322; fax (602) 443-7325. □

For the Record

The Oct. 1 issue of MacWEEK incorrectly stated the upgrade prices for NetWare for Mac Version 3.01. Users who do not register Version 3.0 by Nov. 30 must pay $200 for 20 users and $400 for 100 users to upgrade.

The price and configuration MacWEEK reported last week for the CorrectPrint 300 color printer from RasterOps Corp. have changed. The printer will retail for $10,999 and will come without RAM.

The PC LocalTalk chart in the Sept. 24 ProductWatch section incorrectly listed the amount of required memory in megabytes instead of kilobytes.

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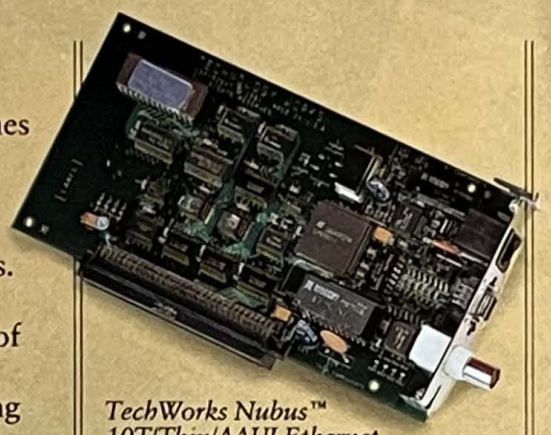

TechWorks Nubus™ 10T/Thin/AAUI Ethernet Card is the only one offering three interfaces on a single board.

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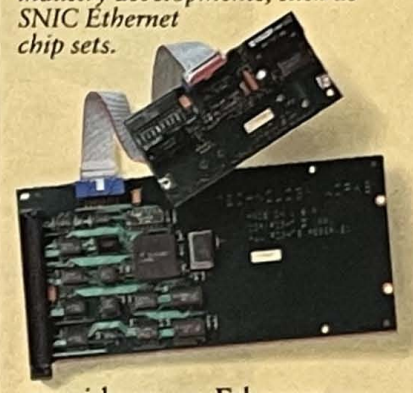

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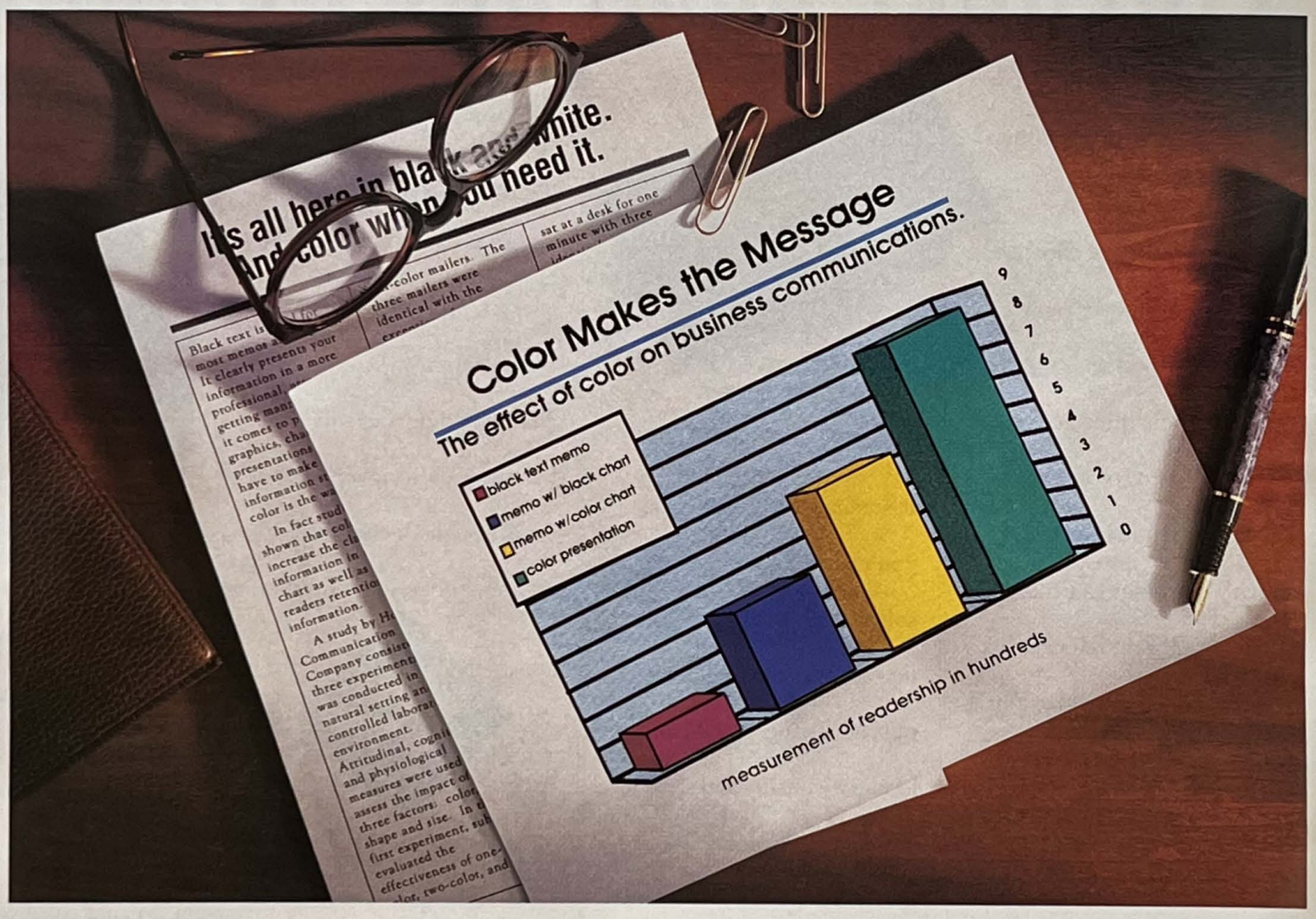
What's the business world coming to?



Now, more Macintosh users can get their hands on some color. Without giving up great black and white. Hewlett-Packard makes it all possible with the new HP DeskWriter C printer. Impressive black and white. And thousands of colors. For just $1,095.*

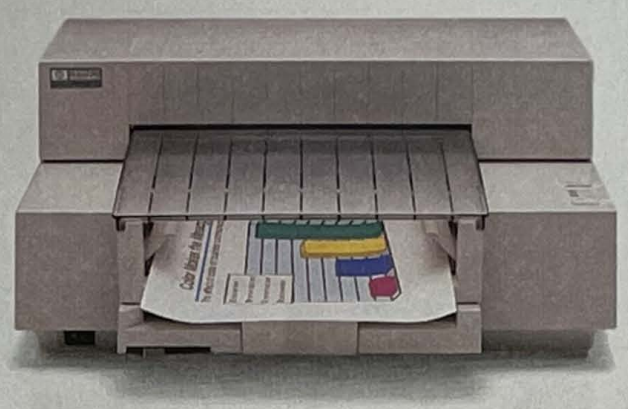
The best features of HP's DeskWriter haven't changed. You'll still get the crisp, clean, laser-sharp output. The 300 dot-per-inch resolution. And you'll still have all the built-in, scalable fonts and graphic capabilities that can make such a difference in your documents and presentations.

Take all that, add a nearly endless choice of attention-getting colors, and Macintosh users have got one very valuable partner. One that's a pleasure to work with. With the DeskWriter C, you just plug, play, and print. On plain paper or transparency. Of course, it's Macintosh and System 7 compatible.

With the DeskWriter C, Hewlett-Packard introduces a colorful new generation to its family of inkjet printers. A family that stands for affordable quality. Quality that's backed by a three-year warranty.

*Suggested U.S. list price. †In Canada, call 1-800-387-3867, Ext. 2646. **Offer valid through January 31, 1992. No purchase necessary; void where prohibited.

Affordable color. Introducing the HP DeskWriter C printer. Only $1,095.



So when other Macintosh users ask you what's new, tell them to get ready for a splash of color. For more interesting graphs and charts. For impressive cover pages and for compelling overhead presentations. All for under $1,095.

If you'd like to see some samples of the DeskWriter C's work, call **1-800-752-0900, Ext. 2646.**† Or visit your nearest authorized HP dealer and sign up for a chance to win a Caribbean cruise for two.** Color is what the business world is coming to.

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Liberty extends compact storage line

MODEL	CAPACITY	MECHANISM	DIMENSIONS	WEIGHT	AVAILABLE	DIRECT PRICE
20 Series HDD	20 Mbytes	Conner or Quantum	1.38 x 3 x 5 in.	15 oz.	December	Not set
	40 Mbytes	Conner or Quantum	1.38 x 3 x 5 in.	15 oz.	December	$899
30 Series HDD	20 Mbytes*	Conner or Quantum	2 x 3 x 5.25 in.	1.75 lbs.	November	$699
	40 Mbytes*	Conner or Quantum	2 x 3 x 5.25 in.	1.75 lbs.	November	$999
50 Series HDD	52 Mbytes	Quantum	1.88 x 4 x 7 in.	2 lbs.	Now	$799
	105 Mbytes	Quantum	1.88 x 4 x 7 in.	2 lbs.	Now	$1,049
	120 Mbytes	Conner	1.88 x 4 x 7 in.	2 lbs.	Now	$1,149
	20-Mbyte Floptical	Insite	1.88 x 4 x 7 in.	2 lbs.	November	$799
70 Series HDD	170 Mbytes	Quantum	2 x 5 x 7 in.	Less than 3 lbs.	Now	$1,299
	210 Mbytes	Quantum	2 x 5 x 7 in.	Less than 3 lbs.	Now	$1,399
	340 Mbytes	Maxtor	2 x 5 x 7 in.	Less than 3 lbs.	Now	$1,799
	425 Mbytes	Quantum	2 x 5 x 7 in.	Less than 3 lbs.	Now	$2,299
	520 Mbytes	Fujitsu	2 x 5 x 7 in.	Less than 3 lbs.	Now	$2,499
70 Series Tape	160 Mbytes	TEAC	2 x 5 x 7 in.	3 lbs.	Now	$899
	600 Mbytes	TEAC	2 x 5 x 7 in.	3 lbs.	November	$1,099
115 Series Optical	128 Mbytes	M.O.S.T.	1.87 x 6.38 x 9 in.	4 lbs.	Now	$1,999
115 Series CD-ROM	600 Mbytes	Sony	1.87 x 6.38 x 9 in.	4 lbs.	Now	$899
115 Series Removable	44 Mbytes	SyQuest	1.87 x 6.38 x 9 in.	4 lbs.	Now	$699
	88 Mbytes	SyQuest	1.87 x 6.38 x 9 in.	4 lbs.	Now	$1,199
	90 Mbytes	Bernoulli	1.87 x 6.38 x 9 in.	4.5 lbs.	This month	$1,299
225 Series Removable	Dual 44 Mbytes	SyQuest	6.87 x 8.38 x 5.63 in.	8 lbs.	Now	$1,299
	Dual 88 Mbytes	SyQuest	6.87 x 8.38 x 5.63 in.	8 lbs.	Now	$1,999
	Dual 90 Mbytes	Bernoulli	6.87 x 8.38 x 5.63 in.	9 lbs.	This month	$2,199
225 Series Optical	650 Mbytes	Sony	6.87 x 8.38 x 5.63 in.	8.7 lbs.	Now	$3,499
225 Series HDD	1.4 Gbyte	Seagate	6.87 x 8.38 x 5.63 in.	8.7 lbs.	Now	$3,499

*Expandable by adding piggyback cartridges.

Removables join little Liberty line

Opticals, flopticals and batteries due

By Henry Norr

Santa Clara, Calif. — In the crowded Mac storage market, Liberty Systems Inc.'s niche is small — perhaps in unit sales and certainly in unit size.

The 5-year-old company has always specialized in packing hard drives into tiny, lightweight cases (see MacWEEK, Sept. 27, 1988, and Feb. 6, 1990). Now Liberty has extended that philosophy to a full line of storage media, tossed in a touch of IBM PC compatibility and developed a battery-power option for several of its models.

The Liberty line is divided into several series, defined by the number of cubic inches their cases fill.

The smallest products, using 2.5-inch mechanisms, require only 20 cubic inches and weigh less than a pound, including built-in power supply. The system attaches directly to the SCSI port and provides a 25-pin SCSI port for additional peripherals; the only cable required is a standard power cord.

Liberty's 30 Series is similar but features a connector that lets the user expand capacity by "piggybacking" cartridges with additional hard disk mechanisms. Later this month the company will offer a battery-power option for the 30 Series, as well as for the larger 50 and 70 Series.

The latest additions to the line (see chart, above) support a variety of removable media, including streaming-tape cassettes, CD-ROM, flopticals, 3.5- and 5.25-inch erasable optical disks, and SyQuest and Bernoulli cartridges.

Most of the Liberty units are also available, at slightly higher prices, with a built-in parallel-to-SCSI converter that allows owners of IBM PCs and compatibles to attach the drives to their systems' parallel printer port. For other models the converter is available as a separate accessory, priced at $179. All Liberty drives are available with Formatter Five from Software Architects Inc. and Dayna Communications Inc.'s DOS Mounter. The $190 package allows users to create and mount both Mac and DOS partitions on the same drive.

All systems are covered by a 30-day money-back guarantee and a one-year warranty; two-year warranties are available on some models.

Liberty Systems Inc. is at 160 Saratoga Ave., Suite 38, Santa Clara, Calif. 95051. Phone (408) 983-1127; fax (408) 243-2885. □

Radius cuts Rocket prices, adds cards

By Raines Cohen

San Jose, Calif. — Radius Inc. cut prices on its Rocket 68040 accelerator and PrecisionColor 8 graphics card and introduced two accelerated color cards at last week's Seybold Computer Publishing Conference & Exposition here.

▸ **Price cuts.** The company's top-of-the-line accelerator, the Rocket, now lists for $2,499, down from $3,495. PrecisionColor 8, Radius' eight-bit unaccelerated color card, now costs $599, down from $795.

▸ **Accelerated color.** Radius also announced last week its PrecisionColor 8X and PrecisionColor 24X, two new accelerated eight- and 24-bit video cards. As previously reported (see MacWEEK, Sept. 17), both color cards for large-screen monitors drive many different displays at a variety of resolutions, from 640 by 480 pixels to 1,152 by 882 pixels. The cards are expected to ship next week.

Supported monitors include all Radius large-format color and gray-scale displays; all Apple color displays; and selected displays from E-Machines Inc., RasterOps Corp. and SuperMac Technology.

The $899 PrecisionColor 8X can be upgraded to 16- or 24-bit color, for $599 and $1,198, respectively. The PrecisionColor 24X is $1,999.

Either card can be combined with the Rocket for greater performance, the company said. Both come with a Mac IIsi NuBus adapter and a one-year warranty.

Radius Inc. is at 1710 Fortune Drive, San Jose, Calif. 95131. Phone (408) 434-1010; fax (408) 434-0127. □

News BRIEFS

Orange Micro upgrades, cuts price on DOS coprocessor

Anaheim, Calif. — Orange Micro Inc. has upgraded the software and cut the price on its Orange386 MS-DOS coprocessor for NuBus Macs.

Version 1.2 of the card's software offers a major new feature that allows Mac applications and DOS programs running on the '386SX-based coprocessor to read and write files to the same folder. Called OrangeShare, the new feature lets users define up to 23 Mac folders as MS-DOS volumes D: through Z:.

Orange also cut the list price of the 16-MHz version of the card by 13 percent, to $1,999. The company offers a 20-MHz version for $2,399.

Orange Micro Inc. is at 1400 N. Lakeview Ave., Anaheim, Calif. 92807. Phone (714) 779-2772; fax (714) 779-9332.

Microsoft bundles coupon for free Quicken with Works

Redmond, Wash. — Those users who would like something for nothing may appreciate a new deal from Microsoft Corp. Beginning this month and lasting until Jan. 31, 1992, each package of the $249 Microsoft Works will include a coupon for a free copy of Quicken 3.0, small-business financial-management software from Intuit Inc. of Menlo Park, Calif.

Quicken, which lists separately for $69.95, lets users manage and transfer funds between accounts. It also can be used for bookkeeping tasks and for electronic bill paying.

Users who want to receive Quicken must mail the coupon, plus $5.50 for shipping and handling, to Microsoft. Customers who bought Works after Sept. 16 can obtain Quicken by calling Microsoft Customer Sales at (800) 426-9400.

Microsoft Corp. is at 1 Microsoft Way, Redmond, Wash. 98052-6399. Phone (206) 882-8080; fax (206) 883-8101.

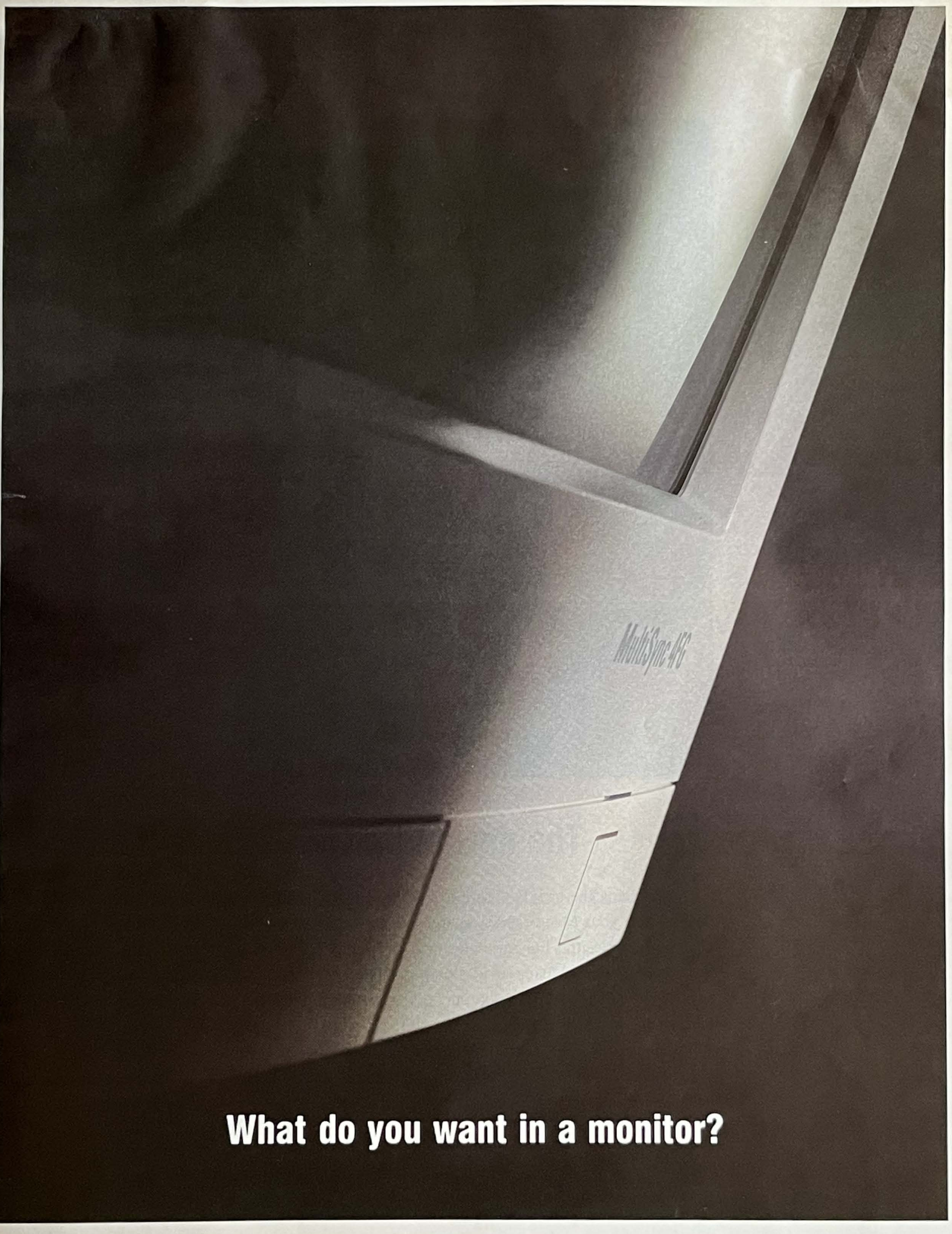
Macmillan offers guides to System 7, telecom, Quicken

Carmel, Ind. — Two divisions of Macmillan Computer Publishing have released three books to help get users up to speed. The new "10 Minute Guide to System 7" by Harry McQuillen IV, from Macmillan's Sams division, offers quick tips for navigating the System 7.0 desktop and customizing the Mac. The $9.95 book also covers TrueType, aliases, and publish and subscribe and includes timesaving and troubleshooting advice.

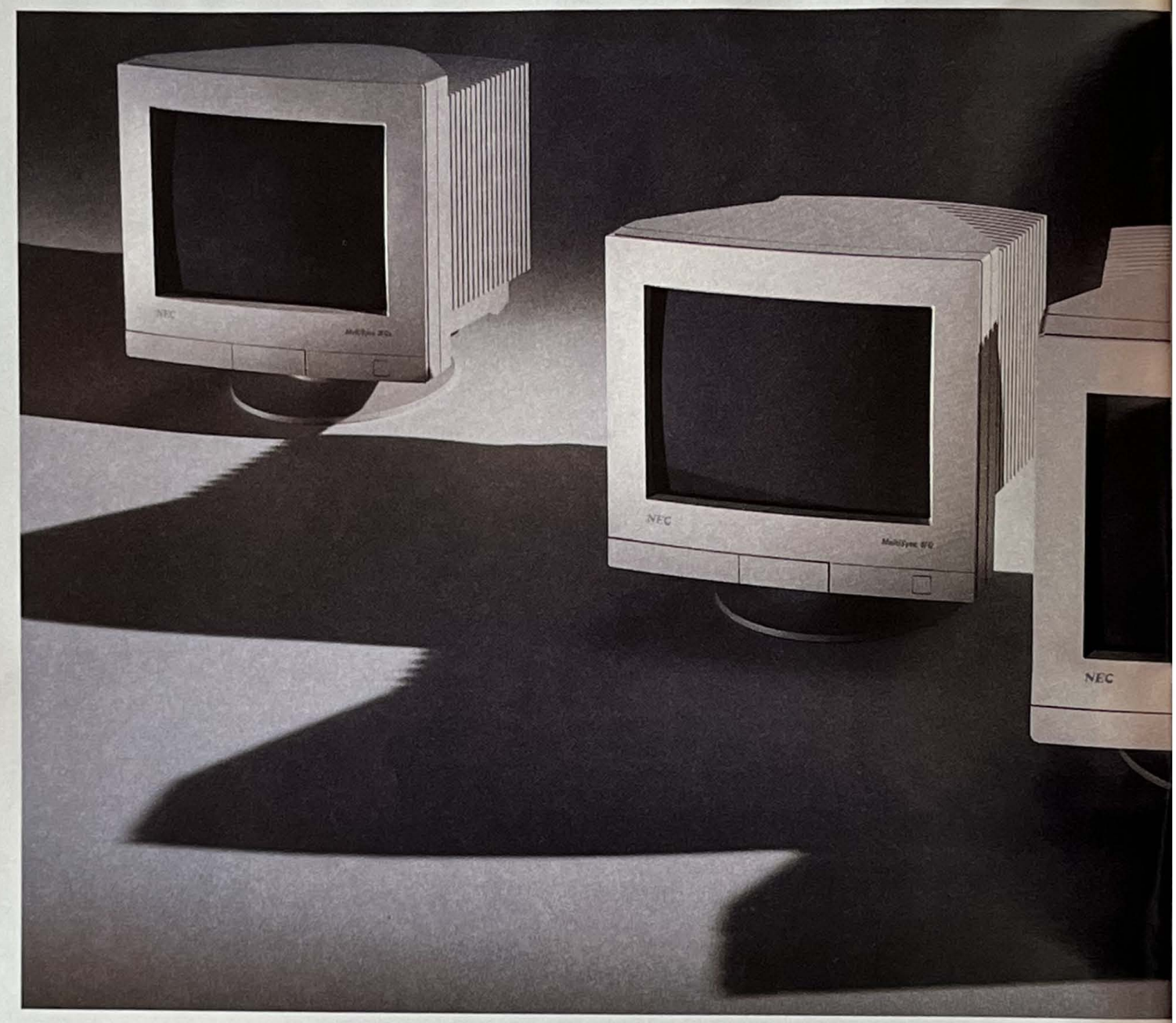
Also from Sams, "The First Book of Modem Communications" by Jack Nimersheim, at $16.95, is intended to help beginning users become comfortable with telecommunications software and transmissions, including modem setup.

Macmillan's Que Division offers "Using Quicken 3 for the Mac" by Stephen Nelson with Greg Shultz, a $19.95 guide for beginning and intermediate users. It includes instructions on setting up financial accounts with Quicken (the personal financial-management program from Intuit Inc.), writing computerized checks and making electronic payments.

Macmillan Computer Publishing is at 11711 N. College Ave., Carmel, Ind. 46032. Phone (317) 573-2500 or (800) 428-5331; fax (317) 573-2583.


MultiSync 4FG
What do you want in a monitor?

How about



Made for Macs. *Not only are the new FG series of monitors made specifically for Apple Computers, we also make many other Apple compatible peripherals, from CD-ROM devices and PC-VCRs to a full line of printers.*

The new MultiSync® monitors from NEC.

Announcing the new FG™ series of MultiSync monitors. Completely redesigned from the inside out to give your Mac brighter, sharper, more accurate images.

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Advanced flat square screen technology gives you a flatter screen, both horizontally and vertically, with a high-contrast surface for exceptionally sharp text and crisp graphics. Larger screens combined with our FullScan™ capability provide an edge-to-edge display with up to 36% greater

*Not available on the 3FGx. ©1991 NEC Technologies, Inc. MultiSync is a registered trademark and FG, AccuColor, FullScan and ErgoDesign are trademarks of NEC Technologies, Inc. Pantone is a registered trademark of Pantone, Inc. Apple is a registered trademark of Apple Computer, Inc. **Dependent on graphics board and signal timing used.

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active screen area** than most conventional monitors. New generation electronics with Invar shadow mask produce tight convergence, less distortion and higher brightness.

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MultiSync monitors are compatible with the Mac II family and most Mac cards, and support a range of video standards from 640 x 480 to high resolution 24 bit color.

The all new FG series from NEC. For an image as clear as the one in your mind.

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PatchWorks developer tool creates, compresses updater apps quickly

By Raines Cohen

Princeton, N.J. — SNA Inc. last month released a developer tool that could help users get faster updates and help publishers cut the cost of maintenance releases.

Called PatchWorks, the new program lets developers create custom updater applications in minutes, with no programming required, according to SNA. The developer can specify which versions of the target software — application, system extension or even font — will be recognized and brought up to date.

PatchWorks uses a proprietary compression technique to reduce the size of updater applications so they can be downloaded economically from on-line services and vendor bulletin boards, the company said.

PatchWorks costs $500 for the first copy, $200 for the second copy and $800 for a site license. The updater applications it creates may be distributed royalty-free.

SNA Inc. is at P.O. Box 3662, Princeton, N.J. 08543. Phone (609) 799-9605; fax (609) 799-9639. □

Newton clips out its GEOvista U.S. maps

Newton, Mass. — Newton Technology Inc. last month shipped GEOvista ClipArt USA Maps, a collection of publication-quality maps of the United States.

The clip-art maps, which can be placed in presentations, newsletters and brochures, originally shipped earlier this year with GEOvista, a $249 application designed to help users create maps based on user data (see MacWEEK, April 30).

The collection, now available separately for use with any graphics application, is $49 in PICT format, $39 in Paint (bit-map) format and $69 in both formats.

Newton Technology Inc. is at 73 Lexington St., Newton, Mass. 02166. Phone (617) 630-0145 or (800) 835-3031; fax (617) 630-0116. □

Claris CAD does tricks with designPower

New add-on handles parametric modeling

By Rochelle Garner

Santa Clara, Calif. — Looking for a way to get more capabilities out of Claris CAD? A new add-on called designPower from Vision Software adds parametric modeling, object linking and animation features to Claris Corp.'s popular 2-D CAD program.

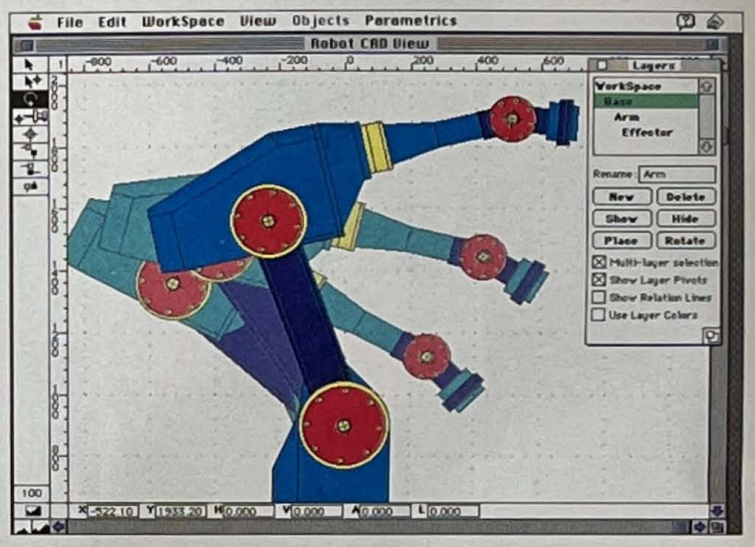
Available for $299 until Oct. 31 and $399 thereafter, designPower lets Claris CAD users rapidly change drawing geometry by entering formulas, values in a spreadsheet or variables. In addition, designPower lets users pin down certain parts of a drawing while manipulating others.

The program lets users perform what-if analyses on a part's clearance or movement by stepping through values in a spreadsheet column or by running a range of values for a particular variable, such as degrees of an angle; designPower will animate the results at user-defined speeds.

Users can stop the sequence at any time, saving files in Claris CAD format to reveal exact dimensions.

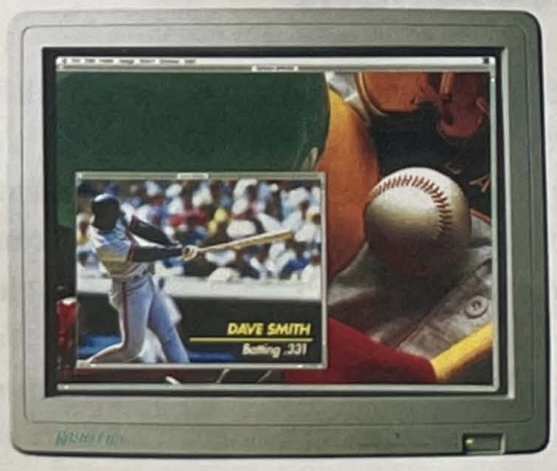
The program offers two methods for dealing with complex shapes: Users can either group objects within layers that have relational dependencies with other layers or take advantage of a feature called object linking, which ensures that objects maintain specific relationships to other objects. For example, a user can specify that a circle will always be attached to the end of a line, then manipulate that line. Vision said engineers tend to use relational layers while architects prefer object linking.

Vision Software is at 3160 De La Cruz Blvd., Santa Clara, Calif. 95054. Phone (408) 748-8411 or (800) 800-8476; fax (408) 748-9584. □



With designPower, users can group objects in interrelated layers. The robot arm (above) was created with three layers that, when moved, show the image in motion.

ONLY ONE COLOR BOARD HAS



VIDEO FRAME CAPTURE,

QuickTime™

QUICKTIME™ COMPATIBILITY,

Scientists navigate a sea of data with Arctic Data Interactive CD-ROM

By Matthew Rothenberg

Del Mar, Calif. — InterNetwork Inc. is exploring new multimedia terrain with a prototype CD-ROM-based science journal created in cooperation with the U.S. Geological Survey.

Arctic Data Interactive, which will be distributed free to 500 key scientists and policy-makers, uses a graphical interface to help users navigate through the disc's contents. ADI's resources include complete scientific texts on the region; satellite imagery; statistical information; and NIH Image, public-domain image-processing software from the National Institutes of Health. ADI topics include Arctic environment, oceanography, global change and anthropology, and policy-making for the region.

InterNetwork won support for the project from 13 U.S. government science agencies. The prototype was created on the Mac; the USGS has developed an MS-DOS version.

InterNetwork Inc. is at 411 Seventh St., Del Mar, Calif. 92014. Phone (619) 755-0439; fax (619) 481-8181. □

This display of satellite data accompanies an article on sea ice in Arctic Data Interactive, a multimedia CD-ROM science journal. Users can animate up to 12 months of satellite images with a mouse click.

PBS updates Pro-Cite bibliographic database

Operations now three times faster

By Henry Norr

Ann Arbor, Mich. — Personal Bibliographic Software Inc. last week delivered Version 2.0 of its Macintosh bibliographic database package, Pro-Cite for the Macintosh.

The new release of the $395 application makes most operations three times faster than in previous releases, according to the company. A new quick-search function makes it possible to search selected fields in seconds, regardless of database size, PBS said. In addition, the program now allows up to 100,000 records, compared with 30,000 previously.

It can generate a bibliography from references within the body of a document in text, MacWrite and Microsoft Word 3.0 or 4.0 formats; previous versions worked only with text files.

Users can output bibliographies, in any of 28 standard styles, in the same file formats. A new preview function shows the document on screen as it will appear on paper.

Other improvements include commands for making global changes to a set of selected records, support for superscript and subscript, a new menu arrangement, and a rewritten manual.

Upgrades are $95. Recent purchasers of Version 1.3 can get the new release free by taking advantage of the company's 30-day money-back guarantee.

Through Oct. 31, customers who upgrade are entitled to a 25 percent discount on other PBS products, including Biblio-Links, an on-line search tool.

Personal Bibliographic Software Inc. is at P.O. Box 4250, Ann Arbor, Mich. 48106. Phone (313) 996-1580; fax (313) 996-4672. □

Niles adds support for WordPerfect 2.0, MacWrite II to EndNote reference tools

Berkeley, Calif. — Niles and Associates Inc., publisher of the EndNote and EndNote Plus bibliographical database and formatting packages, last month shipped updated versions of both programs.

Version 1.4 of EndNote and Version 1.1 of EndNote Plus add support for WordPerfect 2.0 and 2.0.1 and, via Apple's XTND system software, support for Claris Corp.'s MacWrite II.

Users can now direct either of the Niles programs to scan a WordPerfect or MacWrite II document and automatically generate a formatted bibliography from citations in the text.

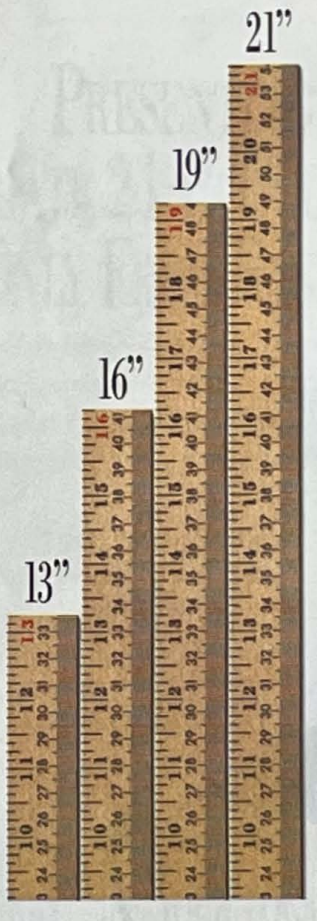
EndNote and EndNote Plus, both of which include an application and a reference desk accessory, are priced at $149 and $249, respectively. Through Nov. 15 they are available directly from Niles at a 35 percent discount.

Updates are free to owners of EndNote Plus and EndNote 1.3 with proof of ownership of WordPerfect or MacWrite II.

Niles and Associates Inc. is at 2000 Hearst St., Berkeley, Calif. 94709. Phone (510) 655-6666; fax (510) 649-8179. □

IMAGE COMPRESSION

ACCELERATION



MULTIPLE MONITOR SUPPORT

Tactic's StereoRecorder gives Macs two channels of sound input, output

By Dartanyan L. Brown and Rochelle Garner

Miami — Tactic Software Corp. is now distributing a new device from Mitshiba Corp. of Taiwan that lets Mac users record and play back stereo sound.

With the new $249 Mitshiba StereoRecorder hardware and software package, users can record right and left sound through the Mac's serial ports.

Stereo playback is limited to members of the Mac II family, which have built-in stereo sound output. The package requires System 6.0.7 and above.

StereoRecorder includes Tactic's Sound Clipper utility software, which records and edits stereo sound as well as converts among sound formats; the Mitshiba sound driver, which records stereo through Apple's Sound control panel; cables; and an omnidirectional clip-on microphone.

Two push buttons on the front of the unit let users switch between the recorder and other peripherals connected to the StereoRecorder's pass-through serial ports.

Tactic said it expects to offer in December Mitshiba's Soundman software, which will record sounds directly to disk, permitting sound files to be larger than available RAM.

With Soundman, users will be able to synchronize recordings to both Musical Instrument Digital Interface and video output.

The software also will support overdubbing.

Tactic said it will offer Soundman free to StereoRecorder users. The software will be available separately for $99.

Tactic Software Corp. is at 11925 S.W. 128 St., Miami, Fla. 33186. Phone (305) 378-4110 or (800) 344-4818; fax (305) 232-7467. □

Interface design added to MacAnalyst

Version 3.1 speeds prototyping efforts

By Mitch Ratcliffe

Marshalltown, Iowa — Excel Software Inc. last month began shipping Version 3.1 of MacAnalyst, adding interface-design capabilities to its computer-aided software engineering program.

Priced at $995, MacAnalyst/Combo 3.1 is a full-featured CASE package that lets software designers build a prototype of an application before they begin to generate code.

Site licenses are available for $2,985.

The new version includes prototyping tools that let designers build a sample environment with dialog boxes, menus, tables and radio buttons that can be linked to simulate the final design.

A new Field tool provides an attributes dialog each time developers create a new screen element. Attribute data is stored directly in the CASE data dictionary for easy retrieval during the project.

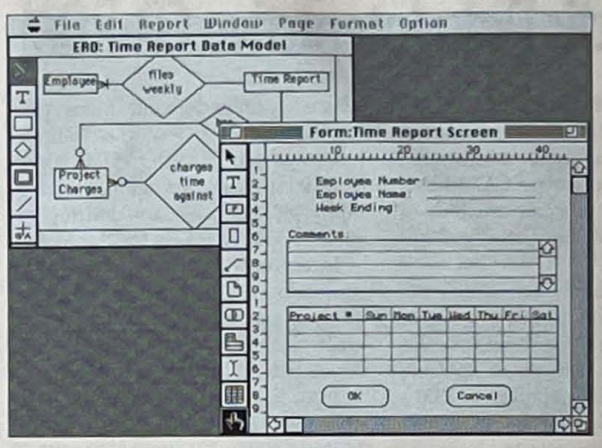
Additionally, a new Dictionary dialog lets designers choose elements that have already been defined by selecting from a dialog menu.

MacAnalyst 3.1 also includes a new capability to import PICT images for use as screen elements, such as icons. PICT icons can be dragged to new locations after pasting them into the design.

MacAnalyst/Expert, a $1,595 extended version of MacAnalyst/Combo with real-time control flow, object-oriented and requirements analyses capabilities, now ships with screen prototyping.

Site licenses for this version are $4,785.

Excel Software Inc. is at P.O. Box 1414, Marshalltown, Iowa 50158. Phone (515) 752-5359; fax (515) 752-2435. □



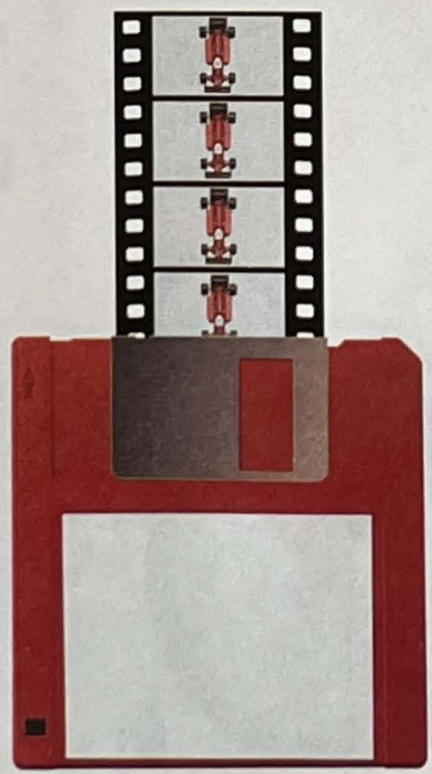
With MacAnalyst's prototyping tools, developers can connect data screen elements (in the foreground) to a CASE data model (seen in background) to simulate an application's final interface.

Decisioneering reduces price of Crystal Ball

Boulder, Colo. — Decisioneering Inc., the recently renamed publisher of Crystal Ball, last week cut the price of its financial risk analysis package from $395 to $195.

The program is an add-on for Microsoft Corp.'s Excel and other spreadsheets. Designed to aid forecasting and decision making, it uses Monte Carlo simulation techniques to generate a range of possible outcomes, rather than a single number (see MacWEEK, May 21).

Decisioneering Inc., formerly Market Engineering Inc., recently moved to 1727 Conestoga St., Boulder, Colo. 80301. Phone (303) 447-6464; fax (303) 441-2487. □



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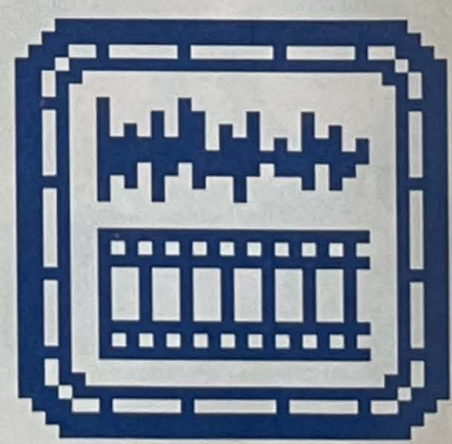

24-BIT COLOR, REAL-TIME COMPRESSION*, EDITING SOFTWARE

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Draw up legal papers without using an attorney with Desktop Lawyer 3.0

By Wade Williams

Orlando, Fla. — An updated program due this month from The Legal Institute of America will put 4 Mbytes of legal forms on the desktops of Mac-based legal eagles.

The Desktop Lawyer 3.0 is designed to let businesspeople, investors and consumers draw up legal papers without consulting an attorney. The $99.95 package contains 43 legal checklists and more than 300 legal forms in such categories as real estate, personal finance, estate planning and asset protection.

In the Mac version of the product, the forms are shipped in Microsoft Word 3.0 format, so they can be opened and customized in a variety of word processors.

The Desktop Lawyer has been available for MS-DOS computers since 1983. The Legal Institute, a publishing arm of Open University Inc., released the first Macintosh version in August. With Version 3.0, the manual, which provides explanations of each form, has been nearly doubled in size to more than 300 pages.

The forms, assembled by Orlando attorney and lecturer Laurence J. Pino, have been certified to meet legal requirements in all 50 states, the company said.

The Legal Institute of America is at 24 S. Orange Ave., Orlando, Fla. 32802. Phone (407) 649-8488 or (800) 874-0388; fax (407) 422-7425. □

Trackball does A/UX

Fremont, Calif. — Mouse Systems Corp. has released its A^3 Trackball, a three-button input device that works with A/UX, Apple's Unix implementation.

The A^3 Trackball, priced at $129.95, invokes common menu commands and performs cursor positioning simultaneously when working in A/UX. It is compatible with the Macintosh operating system, the X Window System under Apple's MacX server software and A/UX. A^3 connects to the Mac's Apple Desktop Bus.

Mouse Systems Corp. is at 47505 Seabridge Drive, Fremont, Calif. 94538. Phone (510) 656-1117; fax (510) 770-1924. □

Cliché, slang stacks add spice to writing

By Raines Cohen

Los Angeles — Slippery Disks, a division of Slippery Enterprises Inc., last month shipped Writer's Dreamtools 2.0, a new version of its collection of HyperCard-based stacks for writers.

The stacks include lists of events and phrases the company said are useful in writing.

The stacks include:

- **Clichés and Catch Phrases,** which has 12,500 clichés and phrases intended to inspire writers of advertising copy and newspaper headlines.
- **Slang,** a stack that provides more than 20,000 slang expressions, indexed with keywords for quick searching.

The new version includes numerous Australian, Yiddish, surfing, skateboarding and cockney rhyming phrases, as well as explicit terminology included "for completeness," the company said.

- **Stack of Events,** which lists 4,000 historical events, sorted by the day of the year. Users can enter personal information for later retrieval along with famous birthdays and occurrences back to 1184. Another file, the Stack of Decades, speeds research by placing events, happenings and progress, by decade, in easy reach.
- **Stack of Lists,** which includes 600 lists of people, places and things around the world. It lists famous people, household items, art, health and geography.

Version 2.0 includes new stacks, more lists and more entries per stack than previous versions. The stacks now take advantage of and include HyperCard 2.1.

Writer's Dreamtools sells for $149; a student version, excluding Slang and Clichés, is $89. The Events, Decades, Slang and Clichés stacks sell for $35 each; the Stack of Lists sells for $49.

Users of Version 1.0 can get both the Stack of Decades and Stack of Lists for $69.

Slippery Disks is at P.O. Box 1126, Los Angeles, Calif. 90069. Phone (213) 274-3600; fax (213) 274-7947.

Heizer Software, which is handling sales of the stacks, is at P.O. Box 232019, Pleasant Hill, Calif. 94523. Phone (415) 943-7667 or (800) 888-7667; fax (415) 943-6882. □

Task Monitor planner gets price cut

Los Altos, Calif. — In an attempt to stay one step ahead of the project-management competition, Monitor Systems Inc. last week reduced the price of Task Monitor 4.2, software intended for scheduling large, complex projects.

Now priced at $349, down from $695, Task Monitor can schedule thousands of activities and relationships, and supports five work breakdown structure fields (see MacWEEK, June 4).

Version 4.2 is compatible with System 7.0. The company also said it has recently improved the program's ease of use to make it more attractive to a broader audience.

Also last week, Monitor Systems announced Task Monitor will be available for $99 to users of Claris Corp.'s MacProject II who send in the front page of their manual.

Monitor Systems Inc. is at 960 N. San Antonio Road, Suite 210, Los Altos, Calif. 94022. Phone (415) 949-1688; fax (415) 949-4688. □

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InterOp '91 attracts Mac vendors

Apple to unveil ISDN NuBus card

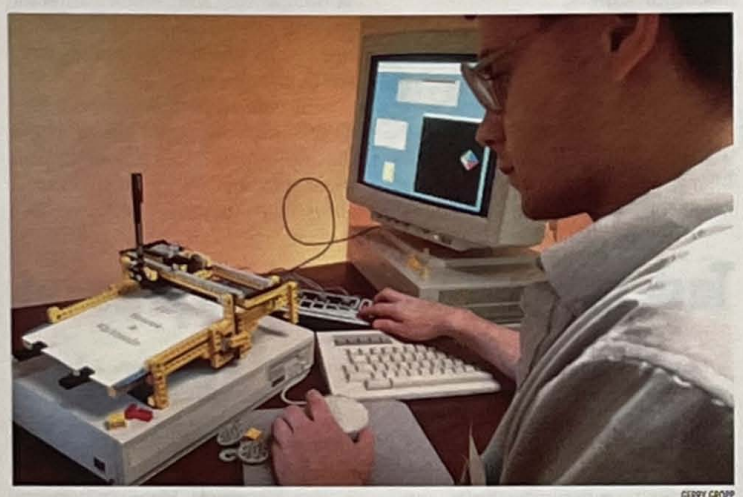
By Mitch Ratcliffe and Margie Wylie

San Jose, Calif. — Apple and third-party Mac vendors will grab their pocket protectors and head south to InterOp '91, held here this week.

Once associated primarily with Unix and TCP/IP, the twice-yearly gathering of network gurus now showcases technology and products based on many different international networking standards.

This year Apple has chosen the venue to unveil its long-awaited ISDN (Integrated Services Digital Network) NuBus card for the Mac (see MacWEEK, Sept. 17). The company also will show new versions of MacTCP (see story, Page 20) and MacX.25 (see MacWEEK, Sept. 24).

Tenon Intersystems Inc. will show MachTen 1.0.1, a Unix kernel that will run on any Mac (see review, Page 58). Also on display will be a MachTen compiler, due later this month.



GERRY GROPP

This plotter, made of Lego blocks and controlled through remote procedure calls, will join other offbeat applications of network standards on display at InterOp '91 this week.

Multiaccess Computing Corp. will provide Switched Multimegabit Data Service (SMDS) connectivity for Macs through its $2,999 SMDSTalk card as part of InterOp's SMDS showcase.

Dispatcher/SMTP for QuickMail, a new $995 SMTP (Simple Mail Transfer Protocol) gateway (see story, this page), and an interim upgrade to NFS/Share, a Mac-based Network File System client, will be highlights at InterCon Systems Corp.'s booth. InterCon also will announce a Mac front end for Performance Systems International Inc.'s new PSILink, which provides low-cost commercial access to the Internet mail service.

The Wollongong Group Inc. will be on hand with Pathway Access 2.0 for Macintosh. The new version of its multiplatform graphical front end to TCP/IP services shipped last week.

In the show's sometimes offbeat spirit of experimentation, several vendors have sponsored technology demonstrations that use standard protocols to control such unlikely devices as a toaster, a mechanical arm made of Legos and a plotter constructed from the same children's blocks. Ethernet-based telephones with a Mac interface also will be on hand. □

InterCon Dispatches gateways

By Nathalie Welch

San Jose, Calif. — InterCon Systems Corp. this week will make the first public showing of its Dispatcher line of electronic-mail gateways for QuickMail here at InterOp '91.

▸ **Dispatcher/SMTP for QuickMail,** shipping since last month for $999, lets users of CE Software Inc.'s QuickMail exchange mail with TCP/IP-based E-mail systems built around the SMTP (Simple Mail Transfer Protocol) standard.

The package works with an unlimited number of users and includes an SNMP (Simple Network Management Protocol) agent and MacTCP, a TCP/IP communications stack from Apple that must reside on the same QuickMail server as the gateway.

Dispatcher/SMTP for QuickMail, which also runs on the same Mac as the QuickMail server, requires an Ethernet card or a LocalTalk-to-Ethernet gateway.

File enclosure formats supported include BinHex, Aladdin Systems Inc.'s StuffIt and PackIt (an older shareware format), Unix's UUencode, Apple's AppleSingle, and Cayman Systems Inc.'s GatorMail-Q. To avoid typing long Internet addresses, users can rely on address book aliases to address outgoing messages.

▸ **Dispatcher/X.400 for QuickMail,** due in November for $1,995 per server, will link QuickMail users to X.400 messaging systems.

Both gateways let the user take advantage of all QuickMail features, according to InterCon.

InterCon Systems Corp. is at 950 Herndon Parkway, Suite 420, Herndon, Va. 22070. Phone (703) 709-9890; fax (703) 709-9896. □

SMTP is E-mail for the masses

SMTP may sound like a motor oil to many Mac users, but to millions of users on TCP/IP networks, the electronic-mail protocol is a familiar friend.

The E-mail protocol standard for TCP/IP has become closely associated with Unix, and some implementation of SMTP (Simple Mail Transfer Protocol) exists for nearly every flavor of Unix, as well as other platforms. The protocol also is often used as an E-mail backbone in TCP/IP networks.

Like TCP/IP, SMTP is being challenged by Open System Interconnection standards. SMTP will slowly give way to OSI's X.400, which is already more popular in Europe and Asia than in the United States.

New MacTOPS, DataClub joust with free System 7.0 file sharing

By Margie Wylie

San Francisco — Two flavors of file-sharing software that became available last week are set to challenge System 7.0's free, built-in file sharing with advantages their creators think make them worth the extra investment.

▸ **DataClub.** International Business Software Inc.'s peer-to-peer file-sharing system now comes in two System 7.0-compatible versions: the $795, 10-user DataClub Classic and the 200-user, $1,395 DataClub Elite.

Both versions are still built on the concept of a "virtual server," which represents disk space scattered over the network as though it were a single volume (see MacWEEK, June 25).

The virtual-server concept lets administrators treat all the peer-to-peer services on the network like one dedicated server, backing it up and managing it without changing how network resources appear to users. System 7.0's file sharing, on the other hand, "makes every user on the network a manager," said IBS President Nick Powell.

DataClub Elite adds a higher limit on users and the capability to dedicate a Mac's CPU entirely to the virtual server. DataClub Classic and Elite support virtual memory and aliases and allow a mix of systems 6 and 7. Upgrades are free to those registered after June 1. Others cost $59 or $99, depending on the number of users.

▸ **MacTOPS 3.1.** According to Sitka Corp., the System 7.0-compatible software, costing $299 per user, offers features not found in Macintosh file sharing: server, as well as client, capabilities for DOS computers, Sun SPARCstations and System 6 Macs.

Farallon Computing Inc.'s PhoneNET Talk lets DOS machines become clients but not servers. Under System 7.0's sharing scheme, System 6 Macs also work under that limitation. Mac file sharing doesn't support SPARCstations.

MacTOPS 3.1 also comes bundled with MacLinkPlus/TOPS, Mac-to-PC file format translators from DataViz Inc., and a coupon for a free copy of Sitka's InBox Plus electronic-mail software. It supports aliases and publish and subscribe. Upgrades cost $75 per site.

International Business Software is at 1270 Oakmead Parkway, Suite 314, Sunnyvale, Calif. 94086. Phone (408) 522-8000; fax (408) 720-0289.

Sitka Corp. is at 950 Marina Village Parkway, Alameda, Calif. 94501. Phone (510) 769-9669 or (800) 848-7677; fax (510) 769-8772. □

What's new in file sharing?

DataClub

- Mixed System 6 and 7.0 network support
- Dedicated server option
- Five times faster

MacTOPS 3.1

- System 6 and System 7.0 compatibility
- Alias, Find File, and publish and subscribe support

Network File System offers services across platforms

TECH ANALYSIS

By Sharon Fisher

San Francisco — Mac network managers who turn to TCP/IP to link multiplatform, wide-area networks are finding that other services associated with the network standard can ease the confusion often associated with mixed environments.

One such standard, Network File System, lets a mix of users share a single file server.

Not just another standard. NFS was developed by Sun Microsystems Inc., and the specification for the services was put into the public domain so that it could be implemented by other vendors, too.

It consists of two parts: a "client," which runs on the user's system and requests files from the "server," on which they're stored.

An NFS server stores files in a format that transcends hardware boundaries and allows many kinds of computers to read files no matter where they are kept, whether on a Unix workstation or even an IBM mainframe.

NFS allows files to be stored in a central location — perhaps a minicomputer with many shared disk drives — but accessed from any other system on the network.

NFS services are available for more than a hundred types of computers, many of them Unix-based. But the standard is also gaining ground outside the Unix klatch. Novell Inc., the Provo, Utah-based maker of NetWare network servers, has created an NFS server for its NetWare v3.11. Even IBM Corp., which traditionally supports only its own communications standards, supports NFS on its mainframes.

So what does it mean to you? There are no NFS server implementations for the Macintosh.

See NFS, Page 20

PAST PRESENT FUTURE

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[The EN/SC SCSI can handle all three types of Ethernet media—thick, thin and 10BaseT.]

[It also provides two SCSI connectors for simple, daisy-chain interconnection.]

And it gives you the option of networking even when your slots are full or you want to save your open slots for the future—good news for everyone.

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NFS

From Page 18

A few vendors, however, make software that lets Macintoshes either act as a client to an NFS server running on a host (usually over TCP/IP) or allows Macintoshes simply to read NFS files off the server (again, over TCP/IP). As with many other implementations of the Unix operating system, both components of NFS — server and client — are built into Apple's Unix for the Mac, A/UX.

The Wollongong Group Inc. of Palo Alto, Calif., this week shipped its $295 PathWay Access 2.0 software; in addition, InterCon Systems Corp. of Herndon, Va., is shipping its $295 NFS/Share 1.1 (see related story, Page 18).

Both of these software packages let Macs that are networked to NFS servers see the files stored there as if they were Mac files. Users select the NFS server through AppleShare extensions in the Mac's Chooser, and files and directories stored on the server appear as icons to Macintosh users.

Cayman Systems Inc. of Cambridge, Mass., lets an entire network of Mac users read NFS files off an NFS host through a software gateway installed on its GatorBox, a LocalTalk-to-Ethernet router. But it doesn't let users view and manipulate the NFS server like an AppleShare server. The GatorBox costs $2,795, and with GatorShare software, the NFS gateway, priced at $1,995.

Apple has never sold an NFS product of its own. According to sources, Apple had planned an NFS implementation developed by the Center for Information Technology Integration at the University of Michigan at Ann Arbor, but the company pulled the product before its anticipated announcement in June 1989. Its status remains unknown.

Who really uses this stuff? Not surprisingly, NFS users tend to be found at sites with a mixture of different types of computers or those that need extra storage capacity.

"Here in the lab, we use it to move large documents — such as GIF [Graphic Interchange Format] files, sequences of images and audio files — between Macs and Suns," said Eric Anderson, a graduate student at the University of California at San Diego who is researching operating systems for multimedia. "Also, the Mac had only an 80-Mbyte hard drive, so we've moved off large [data] objects to the file server," he said.

"One of the reasons we got [NFS] was to let us use data without having to move it or have it in two places," said Eric Frey, a research associate in biomedical engineering at the University of North Carolina in Chapel Hill.

Both users say that without NFS, they would be forced to copy the files from the Unix systems to the Macintoshes. "With NFS, we can see icons," Anderson said. "Files on the Sun still look like Mac files, and they can be double-clicked. To the user, it's just like AppleShare; they see another volume there, open it up and treat it the same way."

As organizations continue to integrate their Macs into the corporate network even more tightly, it's likely that interest in NFS for the Mac will rise. "We believe very strongly that as Apple continues to try to push the Macintosh as one of the standard business desktops, we're going to see interest continue to grow even more," said David Langlais, director of product marketing for Wollongong. □

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System 7.0-compatible MacTCP ready at last

By Mitch Ratcliffe

Cupertino, Calif. — Internet users and others who rely on TCP/IP networks for file transfers and electronic mail will breathe a sigh of relief since Apple started shipping its System 7.0-compatible MacTCP 1.1 last week.

Available now through APDA for $100, the new version corrects compatibility problems encountered when users tried to run it under Apple's newest version of system software, which was released in May.

The MacTCP driver lets Macs communicate using TCP/IP protocols rather than AppleTalk. Some applications that communicate with hosts, such as Unix servers, or that require Internet access depend on MacTCP to provide the low-level network connection.

MacTCP 1.1 supports virtual memory, interapplication communications and file sharing over TCP/IP networks.

Using MacTCP 1.1, developers can design applications that communicate over token ring, serial-line Internet Protocol (SLIP) and Point-to-Point Protocol (PPP) networks. Previously, MacTCP supported only Ethernet connections.

Also new is MacTCP's capability to respond to PING applications, a network query capability in Unix. □

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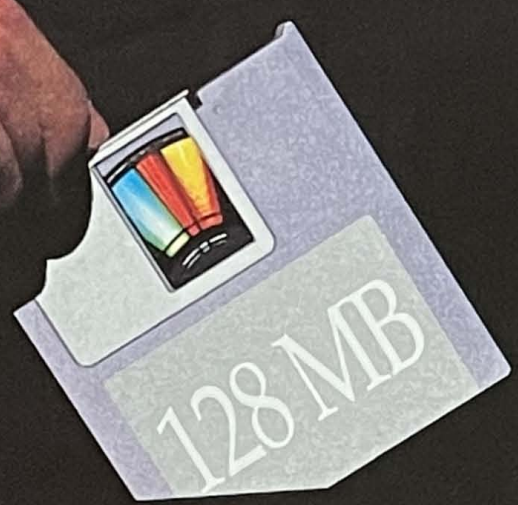

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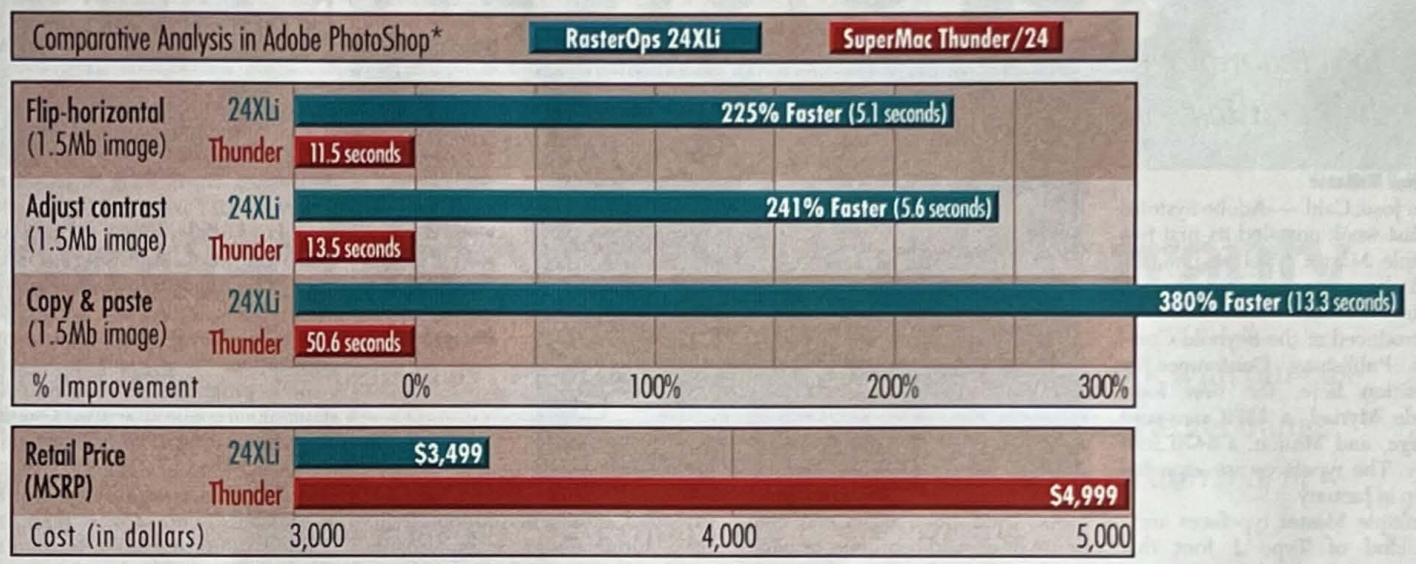

*Tests were conducted running PhotoShop 2.0 under system 6.05. Tests run on Macintosh IIfx under identical conditions. Complete test results available upon request.

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Adobe serves Multiple Master faces

New font technology permits modification

By Neil McManus

San Jose, Calif. — Adobe Systems Inc. last week unveiled its first two Multiple Master typeface families, which allow users to adjust the look of a font.

Introduced at the Seybold Computer Publishing Conference & Exposition here, the new fonts include Myriad, a $370 sans-serif package, and Minion, a $470 serif family. The typefaces are expected to ship in January.

Multiple Master typefaces are a new kind of Type 1 font that promises several advantages over TrueType and other Type 1 fonts, including:

▸ **Typeface manipulation.** Users can quickly modify a Multiple Master typeface's weight, width, visual scale and style.

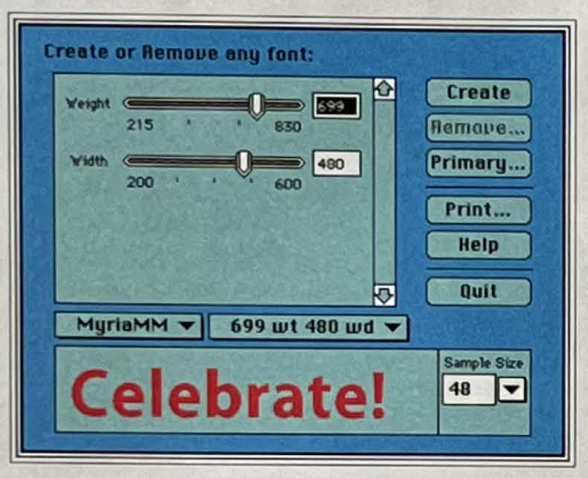
▸ **Copyfitting.** Adobe predicts word processors and spreadsheet applications soon will have automatic Fit To Page commands to take advantage of Multiple Master fonts. Until then, users can condense or expand headlines or paragraphs with Font Creator, an Adobe extension bundled with Multiple Master fonts.

In addition to Font Creator, Adobe's typefaces will come with a specimen book and a new version of Adobe Type Manager that recognizes Multiple Master fonts.

Myriad and Myriad Italic come with two design axes: weight and width. Users can adjust the fonts between light condensed and black extended. Minion and Minion Italic have three design axes: weight, width and optical scale.

Adobe is making its new technology available to other type companies. Executives from International Type Corp., Agfa Compugraphic, Bitstream Corp., Monotype Typography Inc. and Linotype-Hell Co. said their companies will manufacture their own Multiple Master fonts.

Adobe Systems Inc. is at 1585 Charleston Road, Mountain View, Calif. 94039. Phone (415) 961-4400. □



Multiple Master typefaces come with Adobe's new Font Creator extension that lets users adjust the weight and width of a typeface while working in any Mac application.

Managing Editor hires Ad Director: Program offers smarter dummies

By Carolyn Said

San Jose, Calif. — Managing Editor Software Inc. has added ad-dummying capabilities to its portfolio with Ad Director, which made its debut here last week at the Seybold Computer Publishing Conference & Exposition. The company also unveiled an update to Page Director, its page-dummying application.

Both programs can function as stand-alone applications or as QuarkXTensions, add-ons to QuarkXPress from Quark Inc. of Denver.

▸ **Ad Director** can assemble advertising dummies based on user-defined rules and multiple inputs. It outputs standard advertising reports, annotated hard-copy ad dummies, files that can be read by Page Director and exported to XPress, and a publication output file linked to the originating input system.

Scheduled to ship this week, Ad Director will sell for $4,995 and will include a copy of Page Director 1.5. Users who want only printed dummies (without electronic links to Page Director or XPress) can purchase Ad Director for $3,995.

▸ **Page Director 1.5,** an upgrade to the publications management system, adds style-tag support, program-to-program communications, easy cropping of art elements, page gridding, locking of individual elements, and element alignment and justification.

The program is now System 7-savvy with support for core Apple events, hooks for publish and subscribe, aliases, and balloon help, according to Managing Editor.

Page Director 1.5 will sell for $1,495, up from $895.

Managing Editor Software Inc. is at 8208 Brookside Road, Elkins Park, Pa. 19117. Phone (215) 635-5074; fax (215) 635-5046. □

Is PS Level 2 leaving clones out on a limb?

By Mitzi Waltz

Wilsonville, Ore. — The halls of Tektronix Inc. are a good place to inquire about the status of the PostScript-clone printer. After all, Tektronix's Phaser series of clones have consistently been near the top of sales-figure charts for PostScript clones. And a recent cut in the price of the Phaser II PX, a thermal-wax color printer that uses a Level 1 clone interpreter, to $5,995 should give sales a lift.

But the company also has recently signed a technology-exchange deal with Adobe Systems Inc. of Mountain View, Calif., to put an Adobe PostScript Level 2 interpreter into Tektronix's new Phaser III.

"It's not going to be easy to clone Level 2," said A.J. Rogers, strategic marketing manager at Tektronix's Graphics, Printing and Imaging Division here. "We probably would have been in the best position to do it if anyone did, [but] with our new relationship with Adobe, we were able to implement all our best features, as well as have Level 2."

Analysts agree that Level 2 has raised the bar for clone makers. The new version improves PostScript processing speed, adds larger character sets, improves halftoning and much more. And not using Adobe PostScript can turn off some customers who worry about compati-

See Clones, Page 27

SCREEN TEST

Mac rendering powers nuclear blast for 'Terminator II'

Los Angeles — Robert and Dennis Skotak, founders of 4-Ward Productions Inc. here, usually take a traditional approach when they create special effects for movies. But when the Skotaks were hired to simulate downtown Los Angeles being decimated by a nuclear bomb for the movie "Terminator II," they put their model-building tools away and turned to the Mac.

Without computer graphics, Dennis Skotak said, "we would have had to do the shot a half-dozen times and rebuild the models each time."

The Skotaks contacted Jay Roth, president of Pasadena, Calif.-based Electric Image Inc. Within weeks, Roth's staff produced a computer model of Los Angeles and obliterated it on a host of IIfx machines.

Electric Image cropped a scanned photo of Los Angeles in Adobe Systems Inc.'s Photoshop and brought it into the Electric Image Animation System. Using a detailed street map and dimensions from the city planner, the team spent about three days creating 3-D models of each building with a Truevision NuVista card and a high-resolution Sony monitor.

The nuclear blast, followed by a wave of collapsing buildings and a fireball, was created with a custom program called Miniwarp, which Electric Image will include in a future version of EIAS. The staff rendered the scene four times, varying the lighting and shading, for professional-quality film at 2,048 by 898 pixels. They used a IIfx with 32 Mbytes of RAM, which took 18 minutes per frame for 144 frames.

The Skotaks converted the files to registered film prints and integrated them with the original photo of Los Angeles and a painting of the city in ruins.

"It's really an anti-nuke statement," Dennis Skotak said. "Every audience I've watched the movie with seems to be struck with it."

— By Allison de Laveaga

Agfa puts new faces on TrueType CD-ROM

By Neil McManus

Wilmington, Mass. — Agfa Compugraphic this month will boost its AgfaType CD-ROM collection by adding 257 typefaces, bringing the total number of fonts to 1,907.

Version 3.0 of the Agfa library includes 20 TrueType fonts; the rest are in Type 1 format, including the complete Adobe Type Library of more than 1,000 fonts.

The AgfaType CD-ROM, available at an initial price of $99, includes 20 free headline typefaces, such as Metropolis, Bernhard Modern Roman, PL Futura Maxi Demi, Stratford Bold, Section Bold Condensed and PL Benguit Frisky, as well as the choice of one Pi or Symbol font.

Agfa also is offering a $695 bundle that includes the same fonts and a Toshiba TXM3301 CD-ROM drive.

The remaining typefaces are encoded on the CD-ROM. Users access individual font families by purchasing "key" codes by phone or fax.

Utility applications and type-

See Agfa, Page 26

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HSD rounds out flatbed line: Software improves resolution

By Matthew Rothenberg

Mountain View, Calif. — HSD Microcomputer U.S. Inc. is shipping software that improves the resolution of its color and gray-scale Scan-X flatbed scanners.

Now included with the $1,995 eight-bit gray-scale Scan-X Professional and the $2,795 24-bit Scan-X Color, the new software is a plug-in module for Adobe Photoshop 2.0 from Adobe Systems Inc.

The module uses interpolation to increase line-art resolutions from 1,500 dpi to 2,400 dpi and color and gray-scale images from 300 dpi to 600 dpi, according to the company.

The Photoshop plug-in includes a new version of HSD's Spectrum Enhancement technology that lets users finely adjust color or gray-scale images across an eight-bit range.

HSD also announced that Scan-X Color now sports an improved stepper motor that increases vertical resolution to 600 dpi, up from 300 dpi.

Current users of Scan-X Professional or Scan-X Color can upgrade to the new software for $99, according to HSD.

Both Scan-X models include a SCSI interface and capture images up to 8.5 by 14 inches. The scanners are bundled with the complete version of the $895 Photoshop 2.0.

HSD Microcomputer U.S. Inc. is at 1350 Pear Ave., Suite C, Mountain View, Calif. 94043. Phone (415) 964-1400; fax (415) 964-1538. □

Agfa

From Page 24

related programs such as Letraset's LetraStudio 2.0 ($249) also can be purchased from the disc.

Version 3.0 of the AgfaType CD-ROM has a "public section" that contains 7 Mbytes of shareware applications. A new stand-alone SuperCard stack featuring educational screens and an interactive font catalog also is included. Screen fonts for all Type 1 fonts also are included in the public section, allowing users to try out fonts before they buy them.

Registered users of the AgfaType CD-ROM Series 2.1 will receive a free upgrade to Version 3.0.

Agfa Compugraphic is at 200 Ballardvale St., Wilmington, Mass. 01887. Phone (508) 658-5600. □

Authorware update opens Windows to Mac connection

Redwood City, Calif. — Authorware Inc. last month shipped Authorware Professional for Windows. The $8,000 application will allow users of Authorware Professional for Macintosh to deliver their presentations on both Mac and Microsoft Windows platforms.

In converting Mac files to Windows files, the program provides almost 100 percent conversion fidelity, in most cases even taking care of details such as Mac-to-PC font mapping, according to Authorware.

Designed to create interactive learning and communication applications, Authorware features an Object Authoring interface to guide non-technical users. The Windows application includes authoring software; delivery software; controllers for media devices; file importers; a library of examples and models; and graphics, sound and animation files.

Authorware Inc. is at 275 Shoreline Drive, Suite 535, Redwood City, Calif. 94065. Phone (415) 595-3101; fax (415) 595-3077. □

D'pix opens texture library of medium-, high-res images

By Matthew Rothenberg

This marble surface is one of 100 photographic textures available on Folio 1, a new image library from D'pix.

San Jose, Calif. — D'pix this week will add new contours to Mac graphics with Folio 1, a software collection of photographic textures and patterns.

Introduced at last week's Seybold Computer Publishing Conference & Exposition here, the $399.95 package will be available on CD-ROM or 3.5-inch floppy disks. Folio 1 features 100 compressed 75-dpi TIFF files in 24-bit color, each measuring 9 by 12 inches.

The Folio 1 images also are available at a resolution of 266 dpi; the CD-ROM package — a set of three discs — includes encrypted versions of all the files. Each package will include a credit for one 266-dpi file, and D'pix will provide the password to unlock additional high-resolution images on the CD for $75 each.

Users of both the CD-ROM package and the disk package can order 35mm slides or 4-by-5-inch transparencies of the images for $75 each.

The Folio 1 image library includes textures such as wood, marble, bubbles, masonry and fabric, as well as other decorative photographic images. Owners of the package will be granted unrestricted use of each image, according to D'pix.

D'pix is at P.O. Box 572, Columbus, Ohio 43216. Phone (614) 451-4372 or (800) 238-3749; fax (614) 451-5899. □

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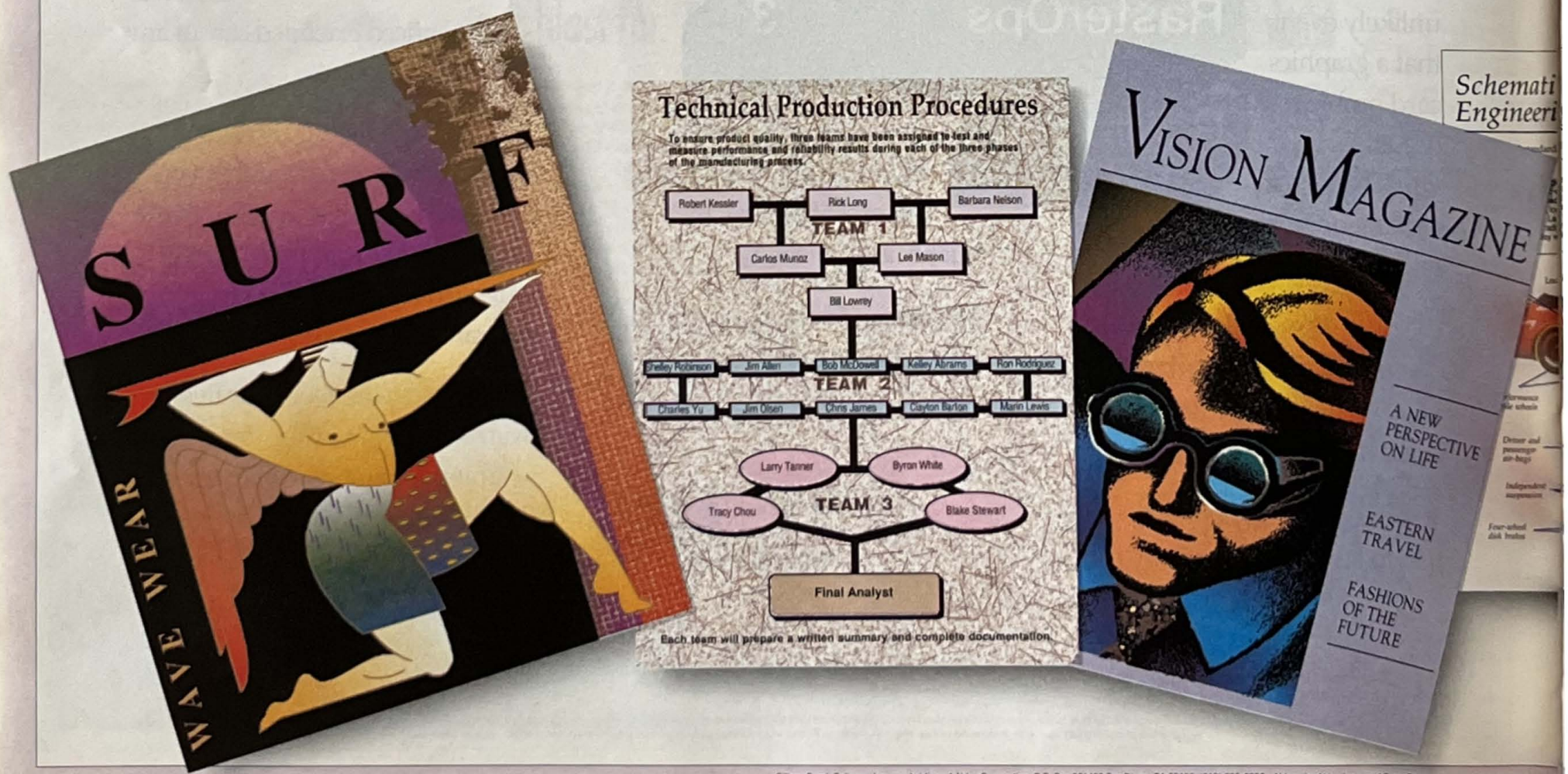

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Clones

From Page 24

bility. But although Tektronix's switch could be seen as marking a move away from clone interpreters, the PostScript clone is hardly down for the count.

Better black and white. Phoenix Technologies Ltd. of Norwood, Mass., vendor of the PhoenixPage clone interpreter, already has announced plans to clone Level 2 PostScript, intending to create a printer with similar functions to Tektronix's Phaser III. Most clone makers, however, are sticking with the black-and-white market and Level 1.

Fewer than 10 percent of PostScript-compatible printers currently use non-Adobe PostScript interpreters, according to Bill Gott, printer industry analyst for the Santa Clara, Calif.-based market research company InfoCorp. That percentage is growing slightly, he added, even though prices for printers equipped with Adobe PostScript interpreters have been dropping drastically. Cost-conscious customers tend to look to the clones for the best combinations of price and speed, he said.

The clone interpreters have found a particular niche among vendors of printers with RISC (reduced instruction set computing) controllers. Level 1 RISC printers are not available with Adobe PostScript.

Bye-bye, TrueImage? One clone that's run into choppy waters is TrueImage from Redmond, Wash.-based Microsoft Corp. Many industry analysts once thought TrueImage could give Adobe a run for its money, but it no longer presents a major challenge — at least not in the Mac market. TrueImage offers Adobe PostScript compatibility, as well as faster processing of TrueType fonts, but Microsoft has decided to tie TrueImage closer to its Windows environment for IBM PCs and compatibles, perhaps angling toward incorporating it into Windows at some point in the future.

TrueImage Product Manager Keith Amodt said Microsoft is not abandoning the Mac market. "There was some confusion in June when the general manager of our printer unit resigned — some believed that we were doing away with the product," he said. That confusion was not dispelled when the TrueImage development group renamed itself the Windows Printing Group, but Amodt said TrueImage will continue to be compatible with PostScript; TrueType fonts; Adobe Type Manager; AppleTalk; and the Mac operating system, including System 7. Microsoft will not, however, create a TrueImage clone of PostScript Level 2, he said.

Price-performance issues. For new or small players in the PostScript printer market, licensing Adobe PostScript can be a tall order. Not only is there an up-front fee, but there's a "click charge" per printer that only gets lower if volume increases. Everex Systems Inc. of Fremont, Calif., decided to bypass Adobe with its Abaton LaserScript LX printer, priced at $1,995. Since it wanted to keep its price less than $2,000 and still offer more fonts and storage than the competition, using a clone interpreter seemed like a good way to go, said May Tsoi, product marketing manager.

"The main thing is the cost-effectiveness," Tsoi said. "OEM-ing the true Adobe PostScript was going to add a lot more cost to our product, and we wanted to position our printer as an affordable output device." In addition, she said, using a clone interpreter gave Everex direct access to source code, allowing it to add any desired extras to the interpreter.

Although Everex is working on a Level 2 printer, Tsoi said the company hasn't yet decided which type of interpreter it will use.

Dr. Milford Greene of Atlanta brought the LaserScript LX into his office because it gave his staff everything it needed for a street price of $1,699, according to graphic artist Imar Hutchins. "We did a cost-benefit analysis, [and] for our purposes it was definitely the most cost-effective solution," Hutchins said. "We liked the amount of memory the printer had, and Abaton [the printer's original designer, since purchased by Everex] had a record of making good products. The number and quality of fonts definitely swayed us," he said. Hutchins uses the LaserScript to output newsletters and other documents.

> *RISC technology is the selling point for many clone printers. Vendors count on these chips to give their products an advantage.*

At Graphic Communications Inc. of Chanhassen, Minn., co-owner Chris Polster said he chose the LaserMaster 1000 MX, a 1,000-dpi $6,995 TrueImage-based printer from LaserMaster Corp. of Eden Prairie, Minn., over comparable Adobe PostScript printers with no regrets. "It had the resolution plus the value," he said. "I don't think you can beat that combination. There's always going to be perceived value [in the Adobe trademark], but when it comes down to economics, that doesn't matter as much," Polster said.

Speed counts. RISC technology is the selling point for many clone printers. Vendors such as Microtek Lab Inc. of Torrance, Calif., and Qume Corp. of Milpitas, Calif., count on these speedy chips to give their products a market advantage.

"We're already the fastest printer on the market; in testing, some files that took 15 minutes to print on an Adobe PostScript-equipped printer took 30 seconds to print on ours," said Qume Engineering Manager Robert Chang. The company's CrystalPrint Publisher II and CrystalPrint Express both sell for less than $3,500. Nevertheless, Chang said, "we're lowering our price to be more competitive with Adobe."

PostScript-clone printers are certainly not disappearing from the Mac scene. Although Level 2 presents new challenges for clone vendors, they've shown tremendous ingenuity in the past. Will they meet the challenge? With Adobe lowering the vendor price for PostScript, and RISC technology spreading out of the clone market, it will be difficult — but they'll certainly keep trying. □

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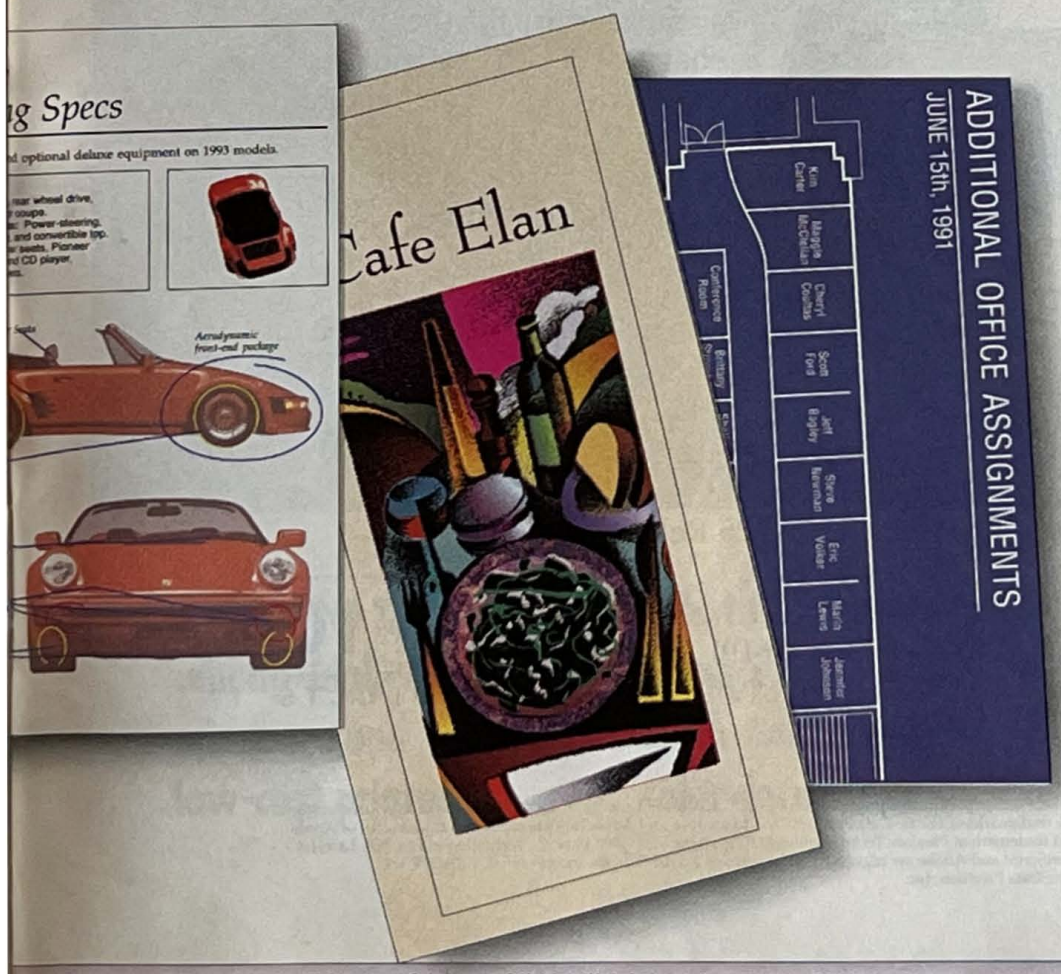

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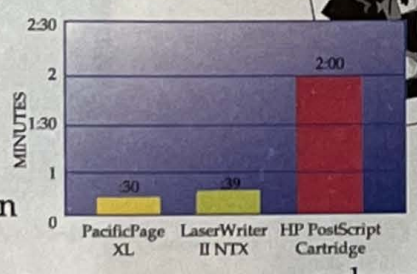

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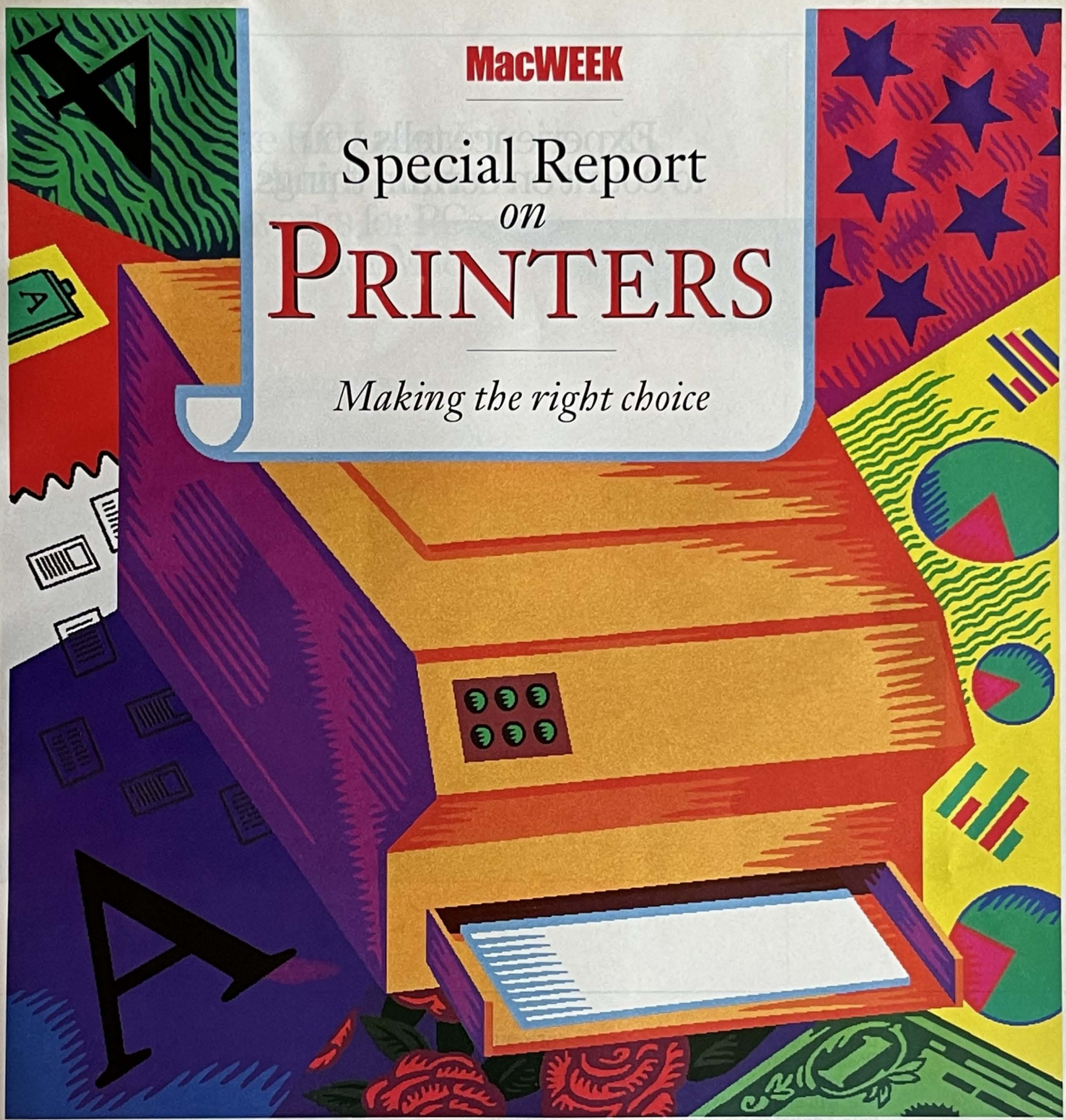
MacWEEK

Special Report *on* PRINTERS

Making the right choice



SCOTT BALDWIN

A guide for choosing among high-volume, midrange and low-cost printers

What PostScript Level 2 will do for black-and-white and color documents

New crop of printers makes color output more affordable

Review of the first two PostScript Level 2 printers now shipping

10.08.91 Volume 5 Number 34

Experience tells you to count on certain things.

Rest assured. With HP LaserJet PostScript* printers, your users, regardless of the computer they use, will always have access to true Adobe* PostScript.
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gives your users on-screen access to such LaserJet features as dual-bin and two-sided printing.† Imagine. Legendary LaserJet quality, along with HP reliability and service, for prices ranging from only $2,495 to $6,995.* For more information and the name of your nearest authorized HP dealer, call **1-800-752-0900, Ext. 2751.**‡ Why take a chance on anything else?

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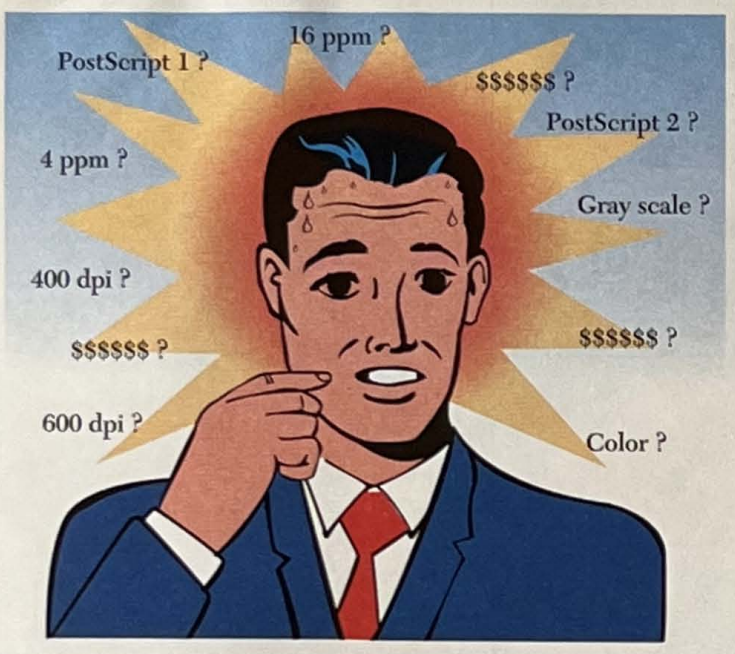


PRINTERS: MAKE THE BEST

Few Mac managers yearn for the days of simple printer choices, when Apple-brand products were the only options. But that doesn't mean managers enjoy cutting through the confusing array of options, including printer speeds, resolution and compatibility. So MacWEEK has done it for you. Use this printer guide to sort out important features and purchasing issues, starting with our "compatibility checklist."

Compatibility checklist: A quiz to help you make the right printer choice

Do you ...

yes	no	
☐	☐	**1.** print volumes of high-quality, time-sensitive documents?
☐	☐	**2.** need to share one printer among 100 or more people?
☐	☐	**3.** print out both letterhead and envelopes on the same printer?
☐	☐	**4.** have a small budget but need high-quality print?
☐	☐	**5.** need to print confidential materials?
☐	☐	**6.** hate to wait for an available network printer?
☐	☐	**7.** print complex graphics on a daily or weekly basis?
☐	☐	**8.** need to proof color images?
☐	☐	**9.** need presentation materials quickly?
☐	☐	**10.** think color documents would enhance your business?

If you answered yes to question ...

- 1, 2 or 3, then read the report on high-volume printers on this page.
- 4, 5 or 6, there are a variety of mid- to low-end printer alternatives available. See Page 33.
- 7, then you should look at the midrange printer guide on Page 33, as complex graphics demand a lot of a printer. Although high-volume printers can print regular text faster, they are just as slow as the lower priced 6- to 8-ppm laser printers when processing graphics.
- 8, 9 or 10, then you should look into a color printer. For information on low-cost color printers and for news on the latest in color-printer technology, see Page 38.

High-volume printing comes at a high price, but the benefits may justify the cost

By Bruce Fraser

Now that personal PostScript printers have become firmly established in the marketplace, vendors' attention has shifted to the other end of the scale — high-volume departmental PostScript printers. These large printers typically have fast engines with speeds in the 12- to 22-page-per-minute range, large-capacity paper bins and monthly duty cycles of at least 25,000 pages. Most of them have processors that are fast enough to do justice to their engine speed, at least in typical situations.

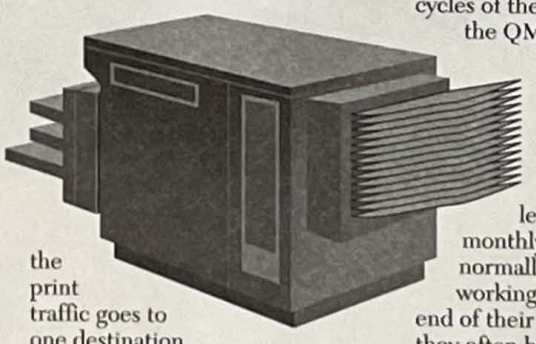
But therein lies the rub. An unusual page on one network may be typical on another. And more than any other single factor, the type of pages being printed affects the overall performance of the printer. A single, large printer seems like a tempting solution for network printing, but it may not be the best solution. There are no magic formulas to determine whether a departmental printer would best suit your needs, but there are several things you should consider in making your decision.

Consider the advantages of a single high-volume printer.

- Fast printing engines spit out long reports quickly.
- You need only to keep a single set of consumables (toner, developer and drum) on hand.
- When it needs maintenance, a single-service contract from a single vendor is cheaper and easier to deal with than multiple service contracts for multiple printers.
- Many high-volume printers offer automatic port-switching and automatic emulation-switching, features that are a boon in a multiplatform environment.
- Paper handling capabilities are more rugged and often more sophisticated than lower-end printers.
- Most high-end printers have multiple paper trays and software that lets you control which pages of a print job are printed from which tray.

Factor in disadvantages, too.

- If your sole printer does go down by some chance, no one can print until it's fixed.
- A centralized printer may create a network bottleneck as all the print traffic goes to one destination.



- High-volume printers don't come cheap. At the low end, Texas Instruments Inc.'s 16-ppm microLaser Turbo XL lists for $3,749. The 17-ppm Hewlett-Packard LaserJet IIIsi comes with a $6,995 price tag, while QMS Inc.'s 20-ppm RISC (reduced instruction set computing)-based PS 2000 workhorse carries a whopping $15,995 sticker. In other words, you can reasonably expect to pay anything from two to 10 times as much as you would pay for a personal PostScript printer.

If, after weighing these pros and cons, you decide that a departmental printer would work for your situation, you need to examine your printing needs carefully to match them to the available printers. Everyone looks at engine speed, but engine speed is only one part of the picture, and with graphics-intensive pages it can be almost irrelevant, as complex PostScript pages rarely print at anything close to rated engine speed.

High-volume demands. The first factor to consider is the monthly duty cycle, that is, the number of pages you need to print in an average month. Medium-duty printers such as the microLaser Turbo XL or Dataproducts Corp.'s 1260 series have monthly duty cycles of 25,000 pages. The duty cycles of the HP LaserJet IIIsi and the QMS-PS 2000 are 50,000 and 70,000 pages per month, respectively. Most printers also are rated for a certain engine life, but this specification is much less important than the monthly duty cycle. Printers normally don't suddenly stop working when they reach the end of their engine life, though they often become more prone to paper jams and misfeeds in their old age. It's also likely that any printer you buy now will seem antiquated in three to four years, at least if the past is any guide.

Graphics or text? The next factor to consider is the content of the pages. If the bulk of the printer's workload consists of simple pages such as straight text, spreadsheets or simple graphics, engine speed affects performance more than anything else. If you make significant use of downloadable fonts, make sure the printer has either a built-in hard disk or a SCSI port to accommodate an external hard disk for font storage.

If your workgroup produces large amounts of complex graphics or deals with scanned images, however, engine speed is much less important than the printer's proces-

See High volume, Page 34

BUY FOR TODAY AND TOMORROW

Midrange printers: Prices tumble while features soar

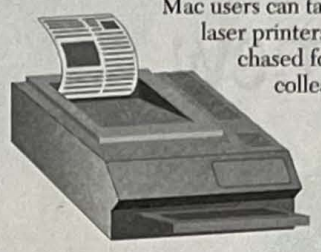
By Larry Stevens

The hefty prices of PostScript printers, often more expensive than the Macs they're connected to, for years have forced many companies to network a large number of Macs to each printer. But over the past year, prices of the low- and midrange PostScript printers have dropped, while their quality, speed, versatility and resolution have risen dramatically. It's now possible to add a high-quality page printer to a single Macintosh or connect one to a network for a small workgroup without breaking your budget.

The $6,995 price tag of Apple's original LaserWriter is now reserved for high-end machines, which are used on large networks or in graphics houses where there is a need for very fast throughput or high resolution. But today, Apple's Personal LaserWriter NT, which has nearly the same features as the original Apple laser printer, sells for less than $2,600, while the new LaserWriter IIf and IIg sell for $3,999 and $4,999, respectively. Other printers in this category, including those from Abaton, GCC Technologies Inc., Hewlett-Packard Co., LaserMaster Corp., Microtek Lab Inc., NEC Technologies Inc., NewGen Systems Corp., QMS Inc. and Texas Instruments Inc. range from about $1,400 to $4,999. These new affordable printers are allowing users to bypass busy networks, bring more work in-house and take advantage of the latest advances in printer technology.

An affordable laser printer enabled Alfred Manufacturing Co. in Denver to finally buy a CAD system. "We wanted to enter the modern age technologically," said Judy Hulvey, office manger at Alfred Manufacturing, "but the high cost of printers was one of the things holding us back. Now that printer price is no longer a hindrance, we sprang for the system." The company was able to get a BLP II from GCC Technologies for less than $2,000 to help automate the drawing process.

Mark Swendsen, assistant marketing manager for band instruments at The Selmer Co. in Elkhart, Iowa, said the lower cost of printers means that his company no longer has to be dependent on outside agencies for all marketing efforts. Last year, The Selmer Co. purchased a number of Macs to do its own graphics work to free itself from expensive design houses. While the Macs enabled the company to design its own material, Swendsen still had to take his files to a service bureau for printing. Now armed with Microtek Lab's TrueLaser, which he purchased for less than $2,500, he is able to be more self-sufficient. "The price was right; the speed was good; this was definitely the time to buy," Swendsen said.



Better features. Besides dropping prices, the second piece of good news is that buying a low- or midrange machine no longer means you have to make sacrifices in quality, speed or connectivity to MS-DOS machines.

▸ Speed. Printers in this price range used to be easily recognizable by their 4-page-per-minute throughput, but the average speed of machines in this class is now closer to 6 ppm. While many printer vendors have two versions of their products — a low-end 4-ppm and a midrange 6-ppm or 8-ppm model — there are also plenty of fast printers with very low price tags.

For example, Texas Instruments' microLaser line has about the lowest price — from $1,399 to $3,749 — but the speed of the printers is about the highest, at 9 ppm. Apple's newly announced LaserWriter IIf and IIg printers include a 25-MHz 68030 processor and other speed enhancements that, according to sources, make them nearly two times faster than the LaserWriter NTX.

▸ Connectivity. An increasing number of midrange printers can accommodate those who work with both Macs and IBM PCs and compatibles. One year ago, the QMS-PS 410 was the only printer that could automatically switch on the fly from a DOS page description language to PostScript, allowing PC or Mac users to output data without having to manually switch the printer. Now several printers have auto-switching capabilities, including Abaton's LaserScript LX and NewGen's TurboPS/300P, which output at 300 dpi, and the TurboPS/400P, which outputs at 400 dpi.

Apple's new LaserWriter IIg has auto-switching capabilities, allowing for simultaneous connection to Ethernet, LocalTalk, RS-232 and RS-422 ports. However, the IIg and the IIf have built-in HP LaserJet IIP emulation only, so files sent from other platforms have to be in PostScript format.

HP's laser printers do not have this switching-on-the-fly capability. But for companies that have a LaserJet IIP or IIIP connected to PCs and want to be able to use them for Macs, the company's PostScript kit is the least expensive way to travel. By adding an AppleTalk interface and a PostScript cartridge for a total cost of $970, Mac users can take advantage of laser printers originally purchased for their PC-based colleagues.

▸ Resolution. Possibly the most startling advances in midrange printers is in resolution, which has broken through the 300-dpi ceiling. This, combined with image-enhancement technologies that further improve the look of the output, allows companies to produce professional-looking brochures and fliers in-house. NewGen's 400P offers 400 dpi for only $2,995, while LaserMaster offers the same resolution for $2,195 on its MaxWriter 400.

Perceived resolution also is affected by image enhancement, a technology that smooths out curves, characters, lines and sharp edges. Image enhancement used to be the sole domain of high-end machines. HP was the first to offer it on its IIP for $2,565 (including PostScript upgrade kit). Now three other companies offer their own versions of this technology — although in both cases the machines are in the upper price limit of midrange printers.

NewGen's proprietary Image Enhancement Technology (IET) is standard on its PS/400P. And

See Midrange, Page 36

ILLUSTRATIONS BY KEVIN BERGER

Going it alone: Low-cost printer alternatives

Although PostScript printer prices have dropped to as low as $1,399, this still may be too expensive for some individuals and small companies that need their own non-networked printers. If so, there are good alternatives in QuickDraw and inkjet printers. Although both printers have their limitations, they offer a lot of performance at a low price.

QuickDraw laser printers. QuickDraw printers use the Mac's built-in library of text and graphics display routines, and are about $400 to $1,000 less then their PostScript cousins. While QuickDraw printers are reasonably priced, they do have a number of disadvantages to consider.

The main disadvantage is that QuickDraw printers cannot output PostScript fonts, PostScript graphics and Encapsulated PostScript clip art.

However, Adobe Type Manager can enable a QuickDraw printer to output PostScript fonts, and Apple's TrueType font technology also greatly increases the number of typefaces available to QuickDraw printer owners.

Apple has recently announced that it will incorporate ATM technology into future system software.

Another disadvantage is that QuickDraw printers use the Mac for all of their processing, while PostScript printers use hardware contained in the printer. As a result, QuickDraw printers usually tie up the Mac longer than PostScript machines.

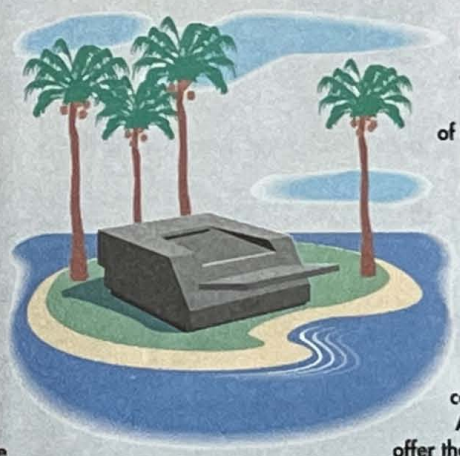
A final problem is that QuickDraw has no presence outside the Mac world. You can use a PostScript laser printer to proof a document and be relatively certain that the final output from a service bureau's imagesetter will match your proof. QuickDraw printers cannot offer the same consistency.

The main players in the QuickDraw page-printer market are the Apple Personal LaserWriter LS, Apple Personal LaserWriter SC and GCC Technologies Inc.'s PLP II and PLP IIS.

Those who create complex documents or need access to many fonts or high-quality clip art normally will need to spring for a PostScript printer. But for most standard office work — letters, memos, reports — a QuickDraw printer can be an extremely cost-effective solution.

Inkjet printers. The least expensive way to get 300-dpi output is to choose an inkjet printer. Starting at $599, inkjets provide close to the same quality output as laser printers at about half the cost.

However, these printers have three disadvantages when compared with laser printers.



First, because inkjet printers use sprayed ink rather than toner, the printed image is not waterproof.

Second, depending on the quality of the paper and the humidity of the room, the ink may smudge or create slightly fuzzy characters.

Third, inkjet printers are very slow, and if used for graphics, large black areas will appear uneven in color.

Despite these problems, inkjet machines produce output that is fully adequate for office correspondence.

Apple and Hewlett-Packard Co. offer the two main inkjet choices. The Apple StyleWriter provides 360-dpi output, and the HP DeskWriter offers 300-dpi output. The DeskWriter comes with an AppleTalk interface so it can be networked; the StyleWriter doesn't.

GCC has a WriteMove Portable inkjet printer, but it outputs at 192 dpi, only slightly better than the resolution available on Apple's dot-matrix ImageWriter. However, WriteMove, while about the same price as the ImageWriter, is lighter and quieter.

The biggest advance in inkjet printers may come this fall. HP is expected to release its $1,095 DeskWriterC, which will provide 300 dpi and color capability. By contrast, color laser printers offering the same resolution start at more than $4,000. — By Larry Stevens

High volume

From Page 32

sor. Many vendors are switching to RISC-based processors, and although independent benchmarks aren't yet available, these should be considerably faster than printers based on the Motorola 68020. Printers based on the Motorola 68000, such as TI's (non-Turbo) microLaser XL, should be avoided if you plan to print complex pages, although they are still more than adequate for straight text. If your graphics needs are more modest, adding more RAM will give modest all-around speed increases at a relatively low cost. Another solution is to purchase a second relatively inexpensive printer to handle the complex pages, leaving the workgroup printer to handle the bulk of the department's workload.

What's ahead. The first PostScript Level 2 printers were just beginning to ship at press time, but it's already clear that, at least for Mac users, most benefits of Level 2 won't be available immediately. While Apple, RealTech and other companies have announced printers that will support PostScript Level 2, Adobe Systems Inc.'s PostScript Level 2 printer driver for the Mac won't be available until year-end, and applications will need rewriting to take advantage of some of Level 2's more advanced features (see story at right). So if you need a printer now, Level 2 shouldn't be an overriding concern. Tomorrow's printers will always be better than today's, but today's range of choices and prices is better than it has ever been in high-volume PostScript printers. □

Black and white and PostScript Level 2

PostScript Level 2 is the first significant upgrade to Adobe Systems Inc.'s PostScript, the industry-standard page description language, and the first Level 2 printers already have been announced. The color capabilities of PostScript Level 2 have received a great deal of attention, but the potential advantages Level 2 offers for monochrome laser printers have been less publicized.

For monochrome printers, the benefits offered by Level 2 are primarily speed and convenience. Compression and decompression filters in Level 2 will allow applications or printer drivers to compress data before sending it to the printer, resulting in reduced transmission times and smaller PostScript files on disk. Memory management is much improved in Level 2. In current PostScript printers, fixed amounts of memory are allocated for such tasks as font caching, page imaging and downloadable fonts. The new memory allocation system is dynamic, so memory can be allocated to different purposes as needed. The end user will have increased speed and fewer PostScript errors.

In addition to the font cache in current PostScript implementations, Level 2 offers separate caches for forms and patterns. While form caching is designed primarily for traditional form processing, any arbitrary collection of graphics and text can be defined as a form and cached between pages. Thus, only the information that changes from page to page requires interpretation — the base form stays in the printer's memory or on the printer's hard disk. Similarly, pattern cells can be defined, cached and recalled, which eliminates the slowdown usually associated with pattern fills.

For international networks, the composite font technology that first appeared in kanji PostScript devices is now built into Level 2, allowing the very large character sets required by Japanese fonts. This technology also has possible uses for Roman fonts, such as the Adobe Expert sets like Adobe Garamond. However, until a replacement for ASCII allows more than 256 characters to be mapped to the keyboard, this feature will be of importance primarily in non-European languages.

Printer-specific features such as multiple paper trays and duplex printing are now supported directly in the PostScript language. Under Level 1, vendors had to include either special drivers or extensions that patch the driver to offer control over paper trays and similar features. With Level 2, a single PostScript printer driver will be able to handle all PostScript printers.

Finally, the PostScript color extensions built into Level 2 also offer some improvements to black-and-white printing. Current PostScript printers do not contain the CMYK (cyan, magenta, yellow, black) color extensions, so PostScript programs have to emulate these, resulting in more code and slower performance. By including the color extensions in Level 2, application developers will no longer have to treat color and monochrome devices differently, and files containing color information will print faster.

However, with the exception of the improved memory management, the new features of PostScript Level 2 will need new printer drivers, and in some cases new applications, before they can be fully exploited. Adobe is developing a PostScript printer driver for the Macintosh, which should be available before year-end. Adobe claims that this driver will also benefit users of Level 1 printers simply by creating more compact PostScript code than the Apple LaserWriter driver. However, more advanced features such as forms caching and JPEG (Joint Photographic Experts Group) compression of color images will need a new generation of applications before their power is unlocked. — By Bruce Fraser

After Thousands of Hours Working With CD-ROM Drives, I Knew The Best When I Saw It.

Scholar, pianist and university professor Robert Winter is the author of the best-selling CD-ROM music software ever marketed—the Voyager CD Companion to Beethoven's 9th Symphony.

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When I found the Chinon drive at a trade show, I couldn't believe my eyes — or ears. All the things I was looking for were there: a small (but elegant!) footprint for easy portability; a separate power supply to eliminate cooling fans and overheating; a fast 350 ms access time; direct RCA audio outputs; a headphone jack with full-range volume control; rugged construction to withstand heavy use and travel; and a great price. It's the drive I recommend to anyone who asks — with only raves from those who have purchased it. Those who claim that CD-ROM is a slow, stodgy technology haven't tried a Chinon drive."

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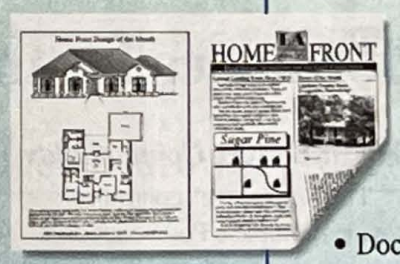

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[1] Contact QMS for availability of network options.
*Patent pending

Midrange

From Page 33

LaserMaster's 800/4 incorporates TurboRes image enhancement that the company claims makes output on that 400-dpi machine look as if it was printed on an 800-dpi printer.

Apple's new PhotoGrade and FinePrint technology will come standard with the LaserWriter IIg, while the PhotoGrade technology will be an option for the LaserWriter IIf. PhotoGrade increases the resolution of gray-scale images, while FinePrint smooths lines and text to achieve nearly 600-dpi quality.

PostScript or just as good. All of the printers described in this article can read PostScript, but those from Abaton and LaserMaster use a PostScript clone. A few problems with software compatibility were discovered on early versions of PostScript clones, but like PC clones, they are now virtually as good as the real thing.

Future flexibility. Besides speed, PC compatibility and resolution, the new range of printers also offers some room to grow as your print jobs become more demanding. For example, a printer's paper-tray size can be an issue when it moves from your desk to a network in another room. In any case, almost all printers that come standard with a small paper tray offer a larger one at an extra cost.

Another feature to consider is the number of resident fonts, which range from about 17 to more than 40. Here again, though, additional fonts can be downloaded.

While PostScript printers have fallen in price, there are still enough distinctions between the various models to prevent them from being considered generic items the way Winchester hard disk drives have become. Choosing a printer involves deciding which of the various features — speed, resolution, PC compatibility, etc. — is most important to you. At this point, there is a machine in the low- to mid-price range to meet almost every business need. □

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The Bézier BP4040 features an internal 16MHz AMD 29000 RISC processor-based postscript controller. Its speed becomes apparent when printing complex text and graphics. Complex documents can be imaged in less than half the time most personal postscript printers require.

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Based on the same LBP-LX laser print engine as the Personal Laser Writer and HP's LaserJet II, the BP4040 has proven quality output performance. With standard 75 sheet input tray and standard 250 sheet paper feeder the Bezier BP4040 can handle all of your personal printing needs.

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RISC printers entering the midrange market

Possibly the most important trend in midrange printers is the introduction of RISC microprocessors.

RISC (reduced instruction set computing) processors sacrifice chip versatility in exchange for speed. Unlike the Motorola 68000-series chips, which are the brains of all Macs, RISC chips are designed for a single purpose. As a result, they can eliminate some instructions and process others in a single machine cycle instead of several cycles as the Mac chip does.

RISC-based printers solve a problem that many buyers become aware of only after their purchase: The page-per-minute rating that a manufacturer assigns to its product refers to engine speed, not processing time. A complicated Aldus PageMaker document, for example, can take three minutes of processing before the print engine starts, which is when the manufacturer clicks on its stopwatch to determine the page-per-minute rating.

The productivity increase provided by RISC processors over Motorola 68000 chips varies based on the material being printed, but the time savings can be as high as 90 percent.

Mark Boer, an analyst at BIS Strategic Decisions in Norwell, Mass., has a 10-Mac network hooked up to QMS Inc.'s QMS-PS 2000. He hasn't done benchmarks, but he said that it is much faster for graphics than previous non-RISC printers.

"Before, if someone had a report full of graphics and charts, the rest of us would have to go to lunch before we could get any printing," he said. "Now the queue of printing jobs moves through much quicker."

Over the past year, RISC processors have taken hold in the high-end market. For example, Hewlett-Packard Co. released the 17-ppm HP LaserJet IIIsi for $6,995; QMS brought out its 20-ppm QMS-PS 2000 for $15,995, which is capable of 11-by-17-inch output; and LaserMaster Corp. introduced its 800-dpi, 8-ppm LaserMaster 800 for $4,995.

Since last spring, users of personal printers have been offered an increasing number of RISC-based printers, which are threatening the 68000-based machines in the $2,500 to $3,500 market.

Microtek Lab Inc.'s TrueLaser prints 6 ppm and is based on an Am29000 32-bit RISC chip. It is compatible with both PostScript and the TrueImage page description language, and offers 35 resident TrueType fonts and 2 Mbytes of RAM that can be expanded to 6 Mbytes.

Epson America Inc.'s EPL-7500 is a 6-ppm unit. It uses a Weitek XL-8200 RISC processor and provides 35 built-in fonts, Adobe PostScript and HP PCL 4 emulation along with 2 Mbytes of RAM that can be expanded to 6 Mbytes. It comes with parallel, serial and AppleTalk interfaces.

The new LZR 960 laser printer from Dataproducts Corp. combines the speed of a Weitek XL-8200 RISC processor along with Adobe PostScript Level 2, which the company says increases speed. The engine prints at 9 ppm giving it the fastest page-per-minute speed combined with a RISC-based processor in the midrange. — By Larry Stevens

All things being equal, they're not.

They're just about the same price. They're made by two very good companies. Yet, there's one thing that makes NEC's Silentwriter®2 Model 90 look much better on paper than the Apple Personal LaserWriter® NT. It prints your work up to 50% faster. Pretty amazing, considering all the other great things NEC's Silentwriter2 Model 90 can do. Of course, it's completely Mac and MS/DOS compatible. It also has screen fonts, a standard 2MB of memory, the ability to do envelopes and it prints the richest blacks you've ever seen. But, most importantly, the Silentwriter2 Model 90 comes with Adobe® PostScript®. So whether you're printing newsletters or flyers, sales sheets, stationery or shareholders' reports, you'll have thirty-five different typefaces to help you create the most dazzling documents possible. For product literature, call 1-800-NEC-INFO. NEC's Silentwriter2 Model 90. Take a close look and you'll find it has no equal.

*Apple Personal LaserWriter NT. $2,599**

*NEC Silentwriter2 Model 90 $2,495**

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C&C Computers and Communications

NEC

Is a color printer in your future?

Color can add a winning spark to business presentations and documents. But some things must change before smaller businesses will invest.

NEVIN BERGER

By Clay Andres

Despite the huge potential for color printers in the business-presentations market, Macintosh color printing is dominated by high-end users willing to pay premium prices for both hardware and hard copy. Several things must change before businesses make a stampede to color.

"Color is a niche market and there are three things keeping it that way," said Ed Pullen, a printer analyst with BIS Strategic Decisions in Norwell, Mass. "One is speed. Second is the cost of equipment and the per-copy cost. Third is the special paper required for high quality."

Despite these problems, high-quality color printers are available in a range of prices, and the advantages of color presentations will not be lost on savvy businesspeople.

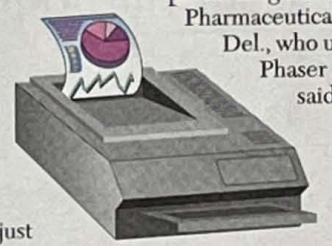
There are two fundamentally different color-printing technologies dominating the under $10,000 market: inkjet at the lower end and thermal wax at the higher. While no single printer in either group has overcome all the drawbacks mentioned by Pullen, some are coming close.

The high-priced spread. All thermal-wax printers share several features. They all print a letter-size page in about one minute, which is about a quarter of the speed of monochrome laser printers; use three- or four-color wax-coated ribbons to reproduce the Mac's palette of 16 million colors; and require special paper or transparency film for the wax image to adhere properly. It's the special paper that gives thermal-wax output consistent high quality and an attractive high-gloss finish.

Consistent reproducible color has made thermal wax the choice for color proofing, and the smooth, even finish makes it the choice for overhead transparencies. Unfortunately, the cost of high quality has scared off most in the presentation market.

But there is hope. A stripped-down thermal-wax printer can be bought for only $4,500 — Mitsubishi International Corp.'s Shinko CHC-445. The Shinko has no serial port and comes with a NuBus card for use only with Mac II machines. For an extra $495 you can have a Mac-standard serial port with General Parametrics Corp.'s Spectra*Star 410 or a slightly faster SCSI port with Tektronix Inc.'s Phaser SX.

But you have to sacrifice PostScript compatibility and AppleTalk to get thermal-wax quality and speed for less than $5,000. Many business users don't require PostScript, but printers that can be networked are standard operating procedure in almost all offices.



Alas, you can't add just AppleTalk. You have to pay another $2,000 to add AppleTalk and PostScript compatibility. There are six manufacturers with networkable, PostScript-compatible thermal-wax printers for $6,995. Four of these use PostScript clone interpreters and come with 6 Mbytes of memory. QMS Inc.'s 10p and NEC Technologies Inc.'s Model 40 have Adobe PostScript, but only 4 Mbytes of memory. The extra 2 Mbytes allow a larger printable area — legal size instead of letter. Again, that's probably not an issue for business presentations.

Capable clones. Is it worth saving money to buy a PostScript clone printer? George Alberici, a principle investigator with Dupont Merck Pharmaceuticals in Wilmington, Del., who uses a Tektronix Phaser II PX ($5,995), said the most important factors in his printer-buying decision were cost, speed and size.

"On a network of 40 Macs, that makes a difference," Alberici said. "And I've yet to have Tek's PostScript fail on me."

Likewise, Hayes Cohen, who uses Seiko Instruments USA Inc.'s tabloid-size ColorPoint PS 14 ($9,999) for his service bureau, Hayes Cohen Design in Flushing, N.Y., said, "I haven't run into any problems with the Phoenix RIP (raster image processor)." Cohen, who does many presentations and overhead transparencies for clients, chose a Seiko printer based on price and quality. "Of all the color printers around, the Seiko's the only one that really did very high-quality gradations," Cohen said. "There's no horizontal banding."

For every clone user, there are others who believe it's worth paying a premium for the security of owning genuine Adobe PostScript. Scott Case, the manager of computer resources for Western R&D at Dow Chemical in Pittsburg, Calif., said: "We're not even interested in PostScript emulation. We don't want to horse around with that." Case uses one of the five OcéColor printers from Océ Graphics USA Inc., the G5241-PS ($8,990), in his division for making regular monthly presentations of his research.

The OcéColor comes with 8 Mbytes of memory, and Case said he likes the quality of the output and the reliability of the printer. "I don't think we've had a single

See Color printers, Page 44

PostScript Level 2 gets color exact every time

Creating color PostScript documents that look the same in print as they do on the screen has long been a hit-and-miss affair. The problem is that each of the devices used to create color documents, including monitors, scanners and printers, don't have a standard color reference point. What looks like red on your monitor can print out as orange on your printer and another shade when you take it to a service bureau's imagesetter.

PostScript Level 2 helps break this vicious circle by providing a color standard that all devices can agree upon. Like the Pantone Matching System, which documents about 1,000 colors by the way various inks are mixed together, PostScript Level 2 gives a complete reference to the colors used in printing. However, instead of matching only 1,000 colors, PostScript Level 2 provides an exact reference to more than 16 million.

How it works. PostScript Level 2 uses an international color standard to give every conceivable color, from its lightest to darkest variation, a unique reference number. Called CIEXYZ, this 3-D color system was developed in France in 1931 by the Commission Internationale de l'Eclairage Commission on Illumination, an international color standards committee. Using CIEXYZ as a reference, PostScript Level 2 can exactly match all the variables caused by different monitors, printers and lighting conditions by comparing the color space definitions of the monitor, printer and scanner, for example, with the CIEXYZ color space. After mapping out the differences in the color spaces of the monitor, printer and scanner, PostScript Level 2 finds the common denominator among them all and uses that as a measuring tool to match the color space of your monitor with the color space of your color printer. The effect should be that the red on your screen will match the red on your page.

Every PostScript Level 2 manufacturer will have to supply its printer with dictionaries to match the device's definition of colors to the general CIEXYZ/PostScript Level 2 definitions. (Even paper-specific dictionaries will be provided eventually.)

PostScript Level 2 printers also will be able to encode and decode images that have been compressed using the JPEG (Joint Photographic Experts Group) standard when the proper header information is put in the PostScript file. This means that by using JPEG, a 1-Mbyte color document could be compressed to 48 Kbytes, sent down the network to your printer and then decompressed in the printer. Typically you will see an improvement in printer performance if you have a very fast printer processor but slow communications channel. However, because of the large amount of processing involved, the normal, uncompressed PostScript Level 2 color file will take longer to print than a PostScript Level 1 color file.

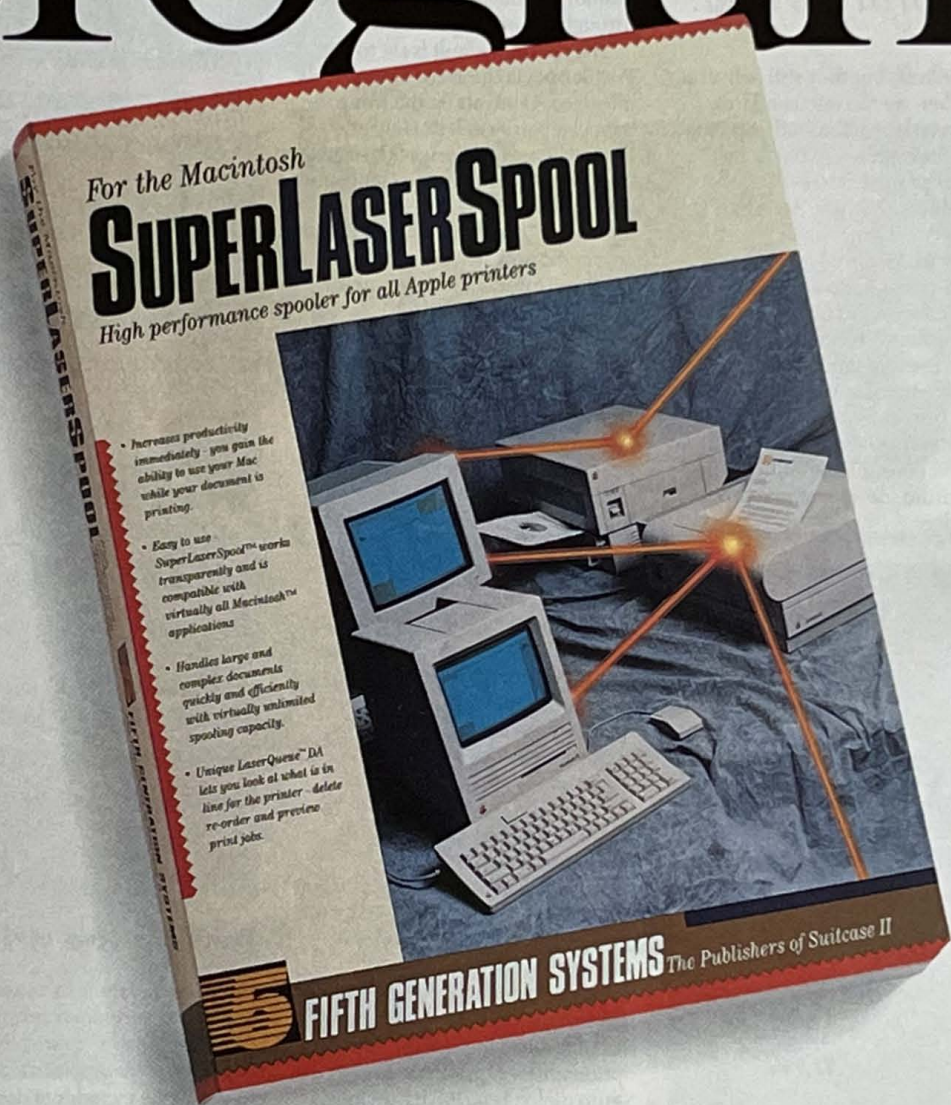
Yet even with these new capabilities, it will be sometime before the potential of PostScript Level 2 will be fully realized, because applications will need to be significantly upgraded to take advantage of the color enhancements. For example, Adobe Systems Inc.'s Illustrator, and Aldus Corp.'s FreeHand and PageMaker all use different printer drivers and will require software upgrades to work with PostScript Level 2. While the recently upgraded Adobe Photoshop 2.0 can use the device-independent color system in PostScript Level 2, it still will require another upgrade before it can take advantage of PostScript Level 2's JPEG encoding and decoding features, according to Adobe.

Level 2 benefits

- PostScript Level 2's CIEXYZ color space enables different devices, regardless of manufacturer, to precisely match colors from screen to print.
- Color files that have been compressed using JPEG compression software will be able to be decoded by PostScript Level 2 color printers, so network traffic and printing times will be greatly reduced.

See Level 2, Page 44

Wait loss program.



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REVIEW

Level 2 printers look like winners

The first printers to use Adobe Systems' PostScript Level 2 have emerged, and it appears that they were worth the wait.

By Bruce Fraser

After months of anticipation and advertising, the first printers to use Adobe Systems Inc.'s PostScript Level 2 have finally arrived. We looked at the same printer in two different guises, the LZR 960 from Dataproducts Corp. and the RealTech Laser from Software & Hardware That Fits, and found them identical except for the logo on the front panel, so all comments in this review apply to both printers.

Some important software is still lacking, notably Adobe's Level 2 printer driver and a formatting utility for SCSI hard disks. As a result, the printers promise more than they deliver, but they still deliver a lot. When we ran our standard benchmarks, we found that on most documents these are the fastest PostScript printers we've tested, often dramatically so (see chart at right).

The printers are based on a 9-page-per-minute engine from Sharp Electronics Corp. that bears a strong family resemblance to the 6-ppm Sharp engine found in the popular microLaser printers from Texas Instruments Inc. Both have the same small footprint and three-element consumables setup — separate drum, developer and toner cartridges.

Setting up the printer and installing the consumables is quick and clean, with the entire process taking less than 10 minutes. For the fainthearted, an accompanying 15-minute videotape walks you through the entire procedure.

The factory default is set to use PostScript via the DIN-8 AppleTalk interface. Controls on the front panel let you switch to Hewlett-Packard LaserJet Series IIP emulation, and you can use the Centronics parallel or RS-232C serial interfaces. The printer also features automatic port switching between the three interfaces, although we didn't test this feature.

Making haste. It takes more than a fast engine to make a fast printer. These printers use a Weitek Corp. 8200 RISC (reduced instruction set computing) processor that turns in the speediest performance we've seen on complex PostScript graphics. The standard complement of 35 PostScript Type 1 fonts are built in, and the standard RAM is 2 Mbytes, expandable to 10 Mbytes. When we tested the printers in 2- and 4-Mbyte configurations, the only significant speed difference we found was in our long Aldus PageMaker document, which printed much faster on the 4-Mbyte configuration, since it had to download fonts less often.

Apart from some problems using a hard disk (see story, Page 42), the only peculiarity we noticed was when we used more than two downloadable fonts on a page: We had to check the "Unlimited downloadable fonts in a document" option under Options in the Page Setup dialog box. With previous PostScript printers this was very much a last resort, because it incurred a severe performance penalty, but we were glad to find that our downloadable-font test document printed very quickly using either memory configuration. Both printers also printed TrueType fonts without incident.

In addition to our standard benchmarks, we ran a set of documents supplied by Adobe that highlights the advantages of the forms caching and data-compression routines used by PostScript Level 2.

No available software packages use these features, so the documents were in the form of downloadable PostScript files. As expected, the documents that used the Level 2 features printed much faster than did their Level 1 equivalents. The data-compression feature was particularly dramatic: An uncompressed one-bit TIFF

See PostScript, Page 42

SCORE CARD

PostScript Level 2 printers

Products	LZR 960	RealTech Laser
Overall value	Very good	Very good
Performance	Excellent	Excellent
Features	Very good	Very good
Installation/configuration	Very good	Very good
Compatibility	Good	Good
Documentation/support	Good	Good
List price	$2,995	$1,995*

Excellent · Very good · Good · Average · Below average

*Includes second paper tray feeder free of charge.

ON BALANCE

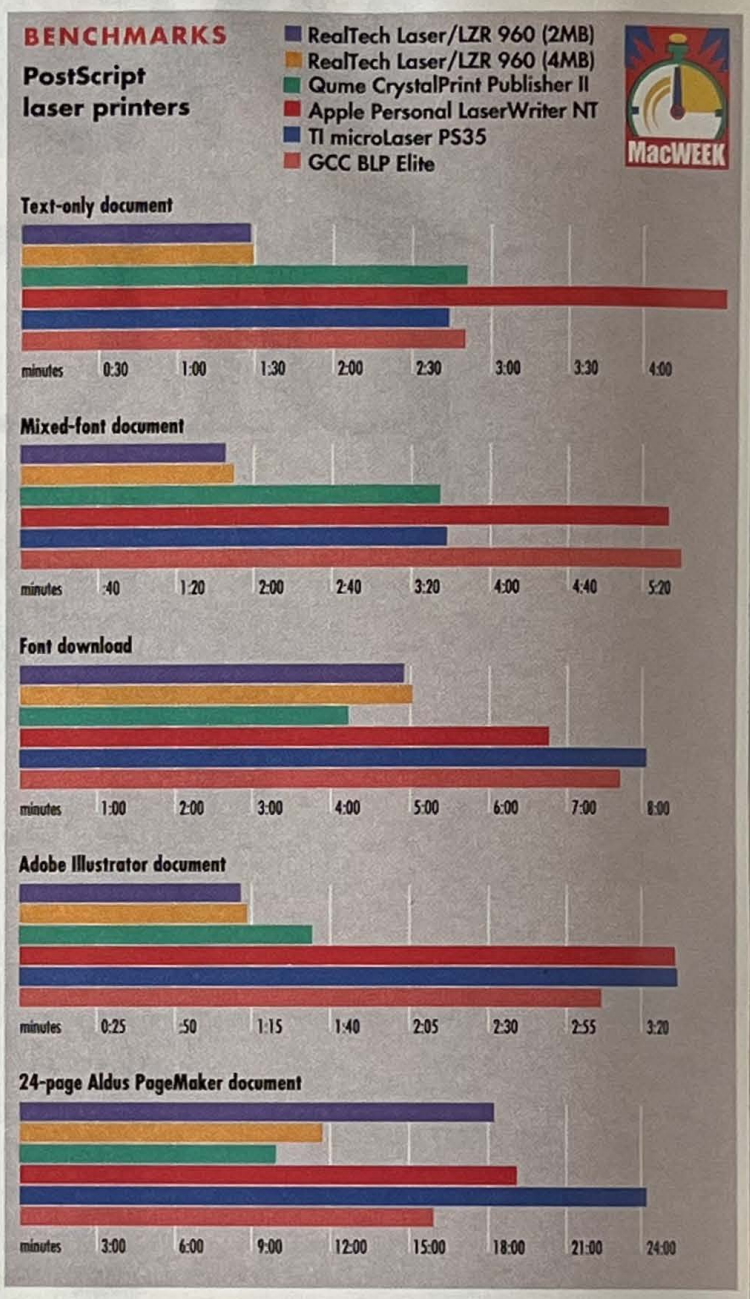
PostScript Level 2 printers

The LZR 960 from Dataproducts Corp. and the RealTech Laser from Software & Hardware That Fits — both of which use a Sharp Electronics Corp. 9-ppm engine — combine high performance, easy setup and maintenance, and very good image quality with a tiny footprint. When printer drivers from Adobe Systems Inc. become available, they should turn in even better performance as Level 2-specific features are brought into play. The lack of a compatible hard disk formatter is presumably a temporary drawback, but it will be a frustrating one for users looking to get every ounce of performance out of their systems.

Given its aggressive pricing and the free second paper-tray feeder, we give the nod to Software & Hardware That Fits' RealTech Laser, but smart buyers should be able to find Dataproducts' LZR 960 heavily discounted as well.

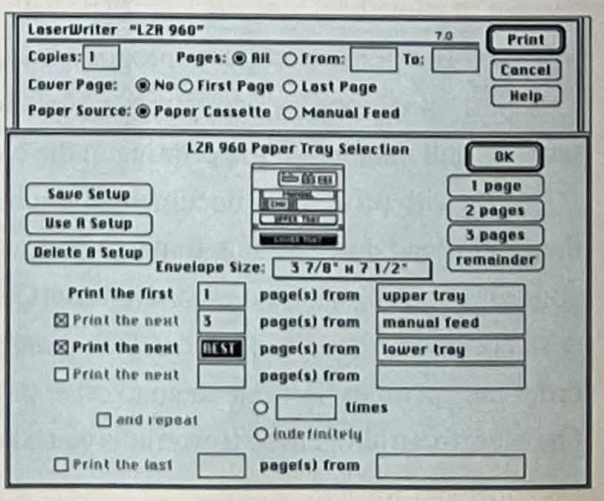
BENCHMARKS

PostScript laser printers



Testing the printers in a Level 1 world

Our performance tests emulate a wide variety of real-world printer uses, from simple text to complex graphics, and show differences in those factors that affect the printers' overall throughput: engine and processor speeds and the efficiency of the AppleTalk connection. The Courier text document tests engine speed. In the mixed-font document, the efficiency of the PostScript font rasterizer comes into play, but engine speed is still the primary factor. The downloadable font test is a rigorous test of AppleTalk efficiency and printer memory handling. The PageMaker document, with nine downloadable fonts and 12 Encapsulated PostScript graphics, is an all-around test of printer and network performance. The 220-Kbyte Adobe Illustrator document contains blends, rotated text and masked objects, which give a good indication of PostScript efficiency and compatibility.



With a second paper tray installed, the printer driver for the LZR 960 and the RealTech Laser offers choices for printing to the trays in various configurations.

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PostScript

From Page 40

image occupied more than 1.5 Mbytes on disk, while the compressed equivalent took up a mere 178 Kbytes and printed in one-fifth the time. The Adobe printer drivers, when they ship later this year, will automatically apply run-length encoding to monochrome and gray-scale TIFF images, but the other compression schemes in Level 2 will need applications written to exploit them.

The paper chase. The standard paper tray holds 250 sheets. An optional $369 second cassette feeder (provided free by Software & Hardware That Fits) holds an additional 250 sheets and sits underneath the printer, maintaining the small footprint. Accompanying software lets you specify which paper tray to use for any page or range of pages in a document. Again, this feature will be a standard part of the Adobe printer drivers, but the software supplied with the printer worked well. A 40-sheet envelope feeder also is available, but it did not arrive in time for our testing. However, we had no problems feeding envelopes manually.

Good looks. Image quality from both units was the equal of any 300-dpi printer, with rich blacks and very little toner scatter. Unlike some printers, these appear to need no break-in period for new consumables — the very first pages printed after setup had no streaking or unevenness.

Conclusions. In all, the printers seem excellent values for the money. With current software they give very short print times that should decrease even further once Level 2-aware software becomes available. The only cloud on the horizon is for System 7.0 users who want to use a hard disk with the printer. In theory, a hard disk should provide more performance gains than will memory expansion, but until software is available to format a hard disk specifically for Level 2 printers, this remains a gray area. In any case, the standard 2-Mbyte configuration seems sufficient for all but the most complex graphics or very large TIFF files.

Cautious types may want to wait until the software questions have been answered satisfactorily, but in general these printers look like real winners.

Based upon Software & Hardware That Fits' aggressive pricing structure, which includes the additional paper-tray feeder free, we give the nod to the mail-order house, but the bottom line is that this is one fine unit, however you get it. □

Not ready for SCSI?

When we attempted to test the LZR 960 and the RealTech Laser printers with a SCSI hard disk attached, we ran into some problems. None of the existing formatting utilities for printer hard disks would recognize any hard disk we attached to the printer, so we were unable to format a hard disk specifically for PostScript Level 2. We did succeed in attaching an Adobe FontFolio disk to both printers, but the results were very disappointing.

First, the hard disk could be used only for fonts. We were unable to download Level 2 form or pattern resources to the hard disk, leading us to the conclusion that hard disks attached to Level 2 printers will have different formatting from those attached to Level 1 printers.

Second, more ominously, we were unable to get the printer to print at all with a hard disk attached. The sole exception was when we printed from PageMaker using the Aldus driver — where the printer/hard disk combination blazed through our 24-page test document. We had to uncheck the Download PostScript Fonts option under the PostScript printing options, and we saw a hitherto-unknown message — Status: Screen chk 2 — during printing, but the pages printed correctly and quickly.

With all other applications, the printer appeared to act normally during printing but never produced pages. Turning off the hard disk cured the problem, but the fonts on the hard disk were of course no longer usable by the printer. We also found that we had to move the LaserWriter driver from the Extensions folder and place it in the root level of the System folder.

We tried a number of hard disks from different vendors with the LZR 960 and the RealTech Laser, but with no success. Both Dataproducts and Software & Hardware That Fits claim that there are only a few hard disks that work properly. If this is important to you, before you buy contact the companies to get the most recent list of compatible drives.

Given these results, it seems clear that for hard disks to work as expected with these printers, new formatting software is needed. This should be available by the time this review appears, but until we've tested the printers with a properly formatted hard disk, we can't draw any firm conclusions about the behavior of the hard disk when printing with System 7.0 drivers. In any case, we expect that most users of these printers will switch to the Adobe printer drivers when they become available. — By Bruce Fraser

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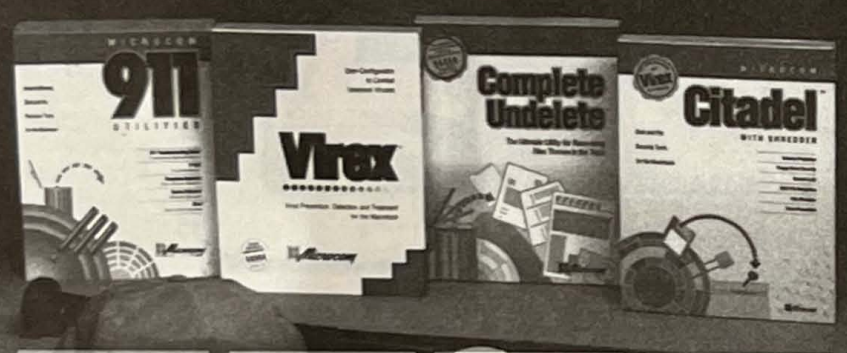

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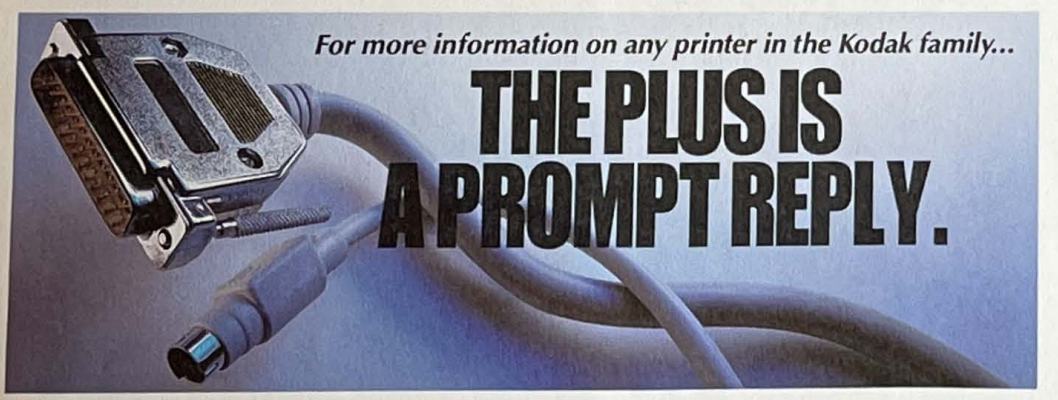

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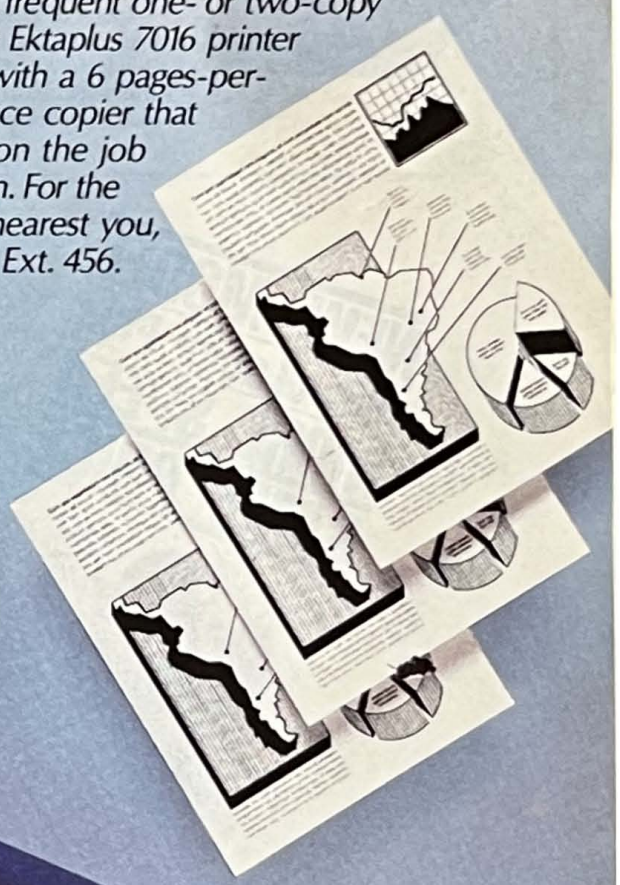

THE PRINTER WITH A PLUS.

KODAK

Kodak Ektaplus 7016 printer

Kodak

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The chief advantage of inkjet is price. HP's PaintWriter is now $995, making it the first color printer for less than $1,000.

Level 2

From Page 38

Printer availability. The first announced Level 2 color printer is Tektronix Inc.'s Phaser III PXi ($9,995). Although the printer began shipping with the Level 2 controller in August, Adobe says the Level 2 printer software drivers will not be ready until the fourth quarter. By that time, several other manufacturers should have Level 2 upgrades ready for their printers — in many cases, it's just a simple ROM change.

The Phaser III has another big advantage that should appeal to high-end users — it prints on plain paper by using solid wax sticks that are melted and shot at the media where the wax dries almost instantaneously.

Even though the Phaser III PXi is now available, PostScript Level 2 is still not on everyone's must-have list. Besides the several-month wait before new drivers and new application software upgrades will be available, PostScript Level 2 cannot solve all color printing problems.

"It's important for people to understand that there are physical limitations that color printing systems simply cannot handle, such as displaying or printing day-glow orange, which has no RGB (red, green blue) or CMYK (cyan, magenta, yellow, black) equivalent," said Rob Babcock, Adobe product manager for PostScript Level 2. "The main goal with PostScript Level 2 is to get consistent predictable color between devices."

Although it will take months to see its full impact, PostScript Level 2's color enhancements should be a boon to anyone who does professional color graphics. — By Erik Holsinger and Clay Andres

Color printers

From Page 38

mechanical problem since we got our first one more than a year and a half ago," Case said. "And these folks are big users."

Inkjet on a budget. For those who can't afford the ante for thermal wax, inkjet printers are the only choice. Up until now, inkjet printers have been slower, lower-resolution machines than thermal-wax printers — typically two to four times slower at two-thirds the resolution. For occasional or shorter presentations, speed is not a big issue, and the lower resolution is more of a problem for text than graphics.

Lawrence Charters, a senior consultant for a high-technology company in San Diego, uses Hewlett-Packard Co.'s PaintWriter XL ($2,595) to make color presentations of his spreadsheets. "We printed some Wingz charts and it's hard to do justice to them, but they were stunning," Charters said. "It's also the cheapest way to make an 11-inch-by-17-inch poster I know of."

The chief advantage of inkjet is price. HP recently reduced the price of the PaintWriter ($995), making it the first color printer for less than $1,000. HP also announced the 300-dpi, inkjet DeskWriterC ($1,095), which promises both high-quality text and low-cost color from a single printer.

While the PaintJet is the only color inkjet with an AppleTalk interface, a boon to network users, it also requires special paper and transparency film. So when you buy replacement HP ink cartridges, you'll also need to get HP's media.

In contrast, Eastman Kodak Co.'s new Diconix Color 4 ($1,595) and Tektronix's ColorQuick ($2,564) can use plain office stock. This is a big advantage if you want to print on company letterhead. Nonetheless, HP is likely to maintain its dominance in the color inkjet market because of its aggressive pricing and many offerings.

Colorful choices. Whether you choose inkjet for its affordability or spring for the high quality of thermal wax, once you have used color for presentations, it's hard to go back. □

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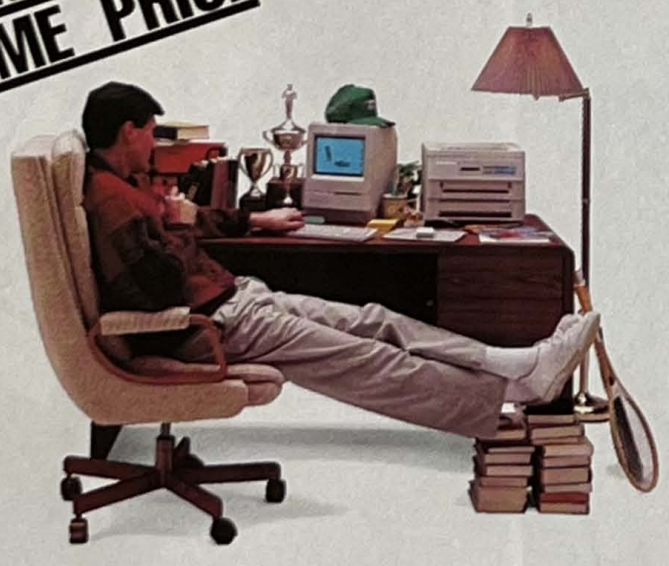

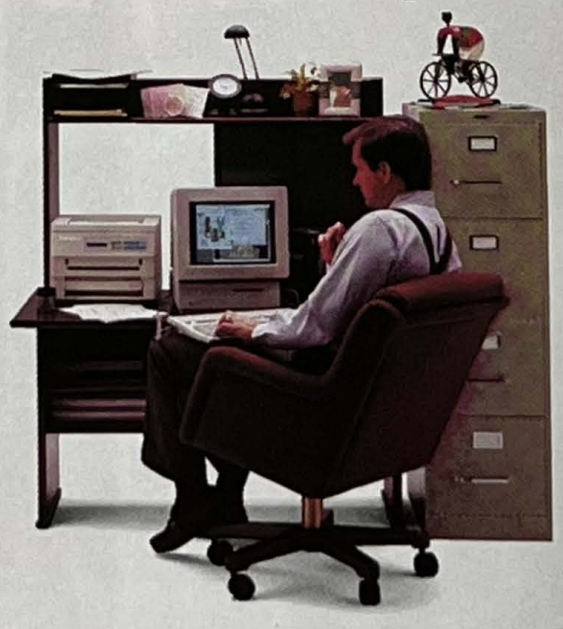

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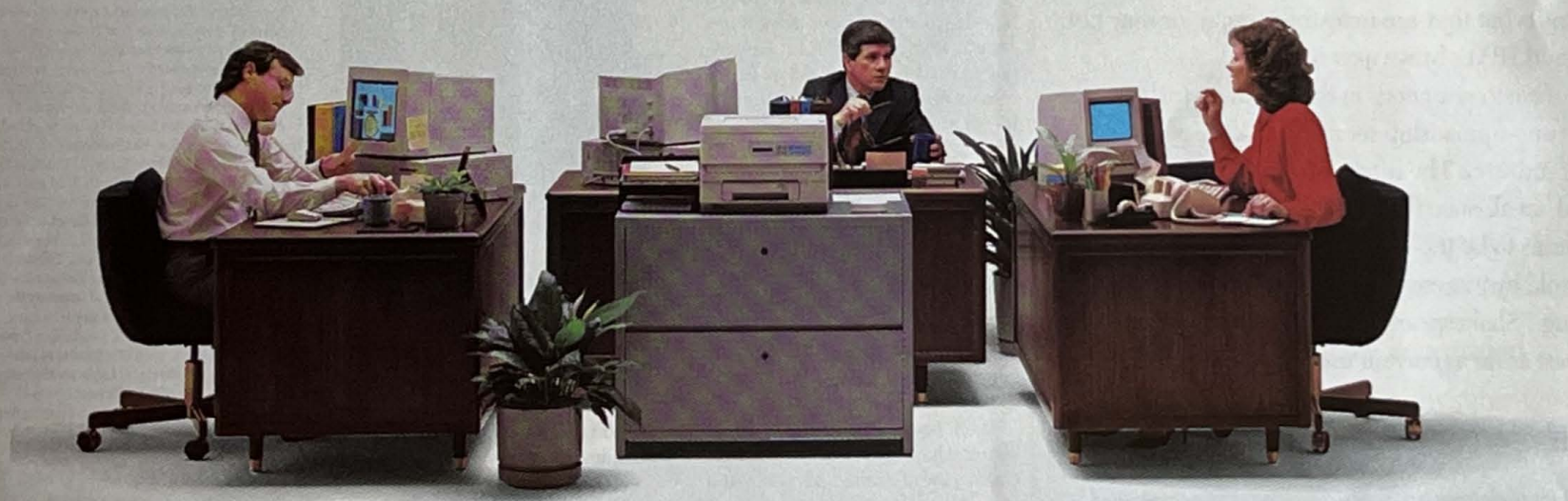

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EDITORIAL

Cry havoc and let slip the dogs of war

If William Shakespeare were alive today and reporting on the current state of computing, his play, "Much Ado About Nothing," might well have contained his observations of Apple and IBM Corp.'s highly publicized deal.

"What difference doth it make if IBM and Apple have penned a pact unlikely to bear fruit before 1993," the bard might have asked, "when customers are still taking arms against a sea of troubles caused by what IBM and Apple currently offer?"

Users are already drowning in alphabet soup, struggling to make sense of DOS 5.0, OS/2 2.0, Windows 3.0, System 7.0, A/UX 2.0 and AIX, not to mention the Motorola 680xxes and Intel 80x86s. Now IBM and Apple want to add to the tempest terms such as Pink, RISC and object-oriented OSes.

While IBM and Apple deserve kudos for establishing an alliance that will try to produce the next generation of computers and software, they also should be careful not to mislead customers. In the process of giving us tantalizing glimpses at their scalable, portable plans, they also are playing out their friendly little war with Microsoft and are scaring the hell out of managers struggling to make current OSes and hardware work.

Both companies' technologies are plagued by problems that won't just go away. Upgrading to System 7.0 and trying to fathom what works, what doesn't work, what's 32-bit-clean and what it all means in terms of their multiplatform installations are real issues that managers are struggling with right now.

These same users are expected to factor in Apple's and IBM's vaporous creation in their plans. Managers are making technology investments today that won't be fully amortized for five years, and what they are investing in may, or may not, fit into Apple's and IBM's brave new world.

Losing sight of customer needs in the mindless rush of public-relations one-upmanship seems to be a chronic illness in the computer industry. The furor surrounding the Apple/IBM deal, an alliance that won't result in solutions for years, if ever, seems to be the worse case of the disease to date.

"... it is a tale told by two companies, full of sound and fury, signifying nothing," Shakespeare might have observed of Apple and IBM. "At least as far as current users are concerned." □

2 years ago in MacWEEK

Oct. 10, 1989: Apple and Quantum unveil a plan to deal with the large number of failing 40-Mbyte and 80-Mbyte Quantum drives in Macs.

In retrospect: Who knew this was to be the prototype defective-drive policy for many Macs to come?

Letters

Uncritical perversion for deviate co-option?

Letter writer Jon Buffington (MacWEEK, Aug. 13) correctly identifies and distinguishes the operation of client-server-based computing: The server is asked to perform a process on behalf of a client, performs the process and communicates the result. The task is performed by the server, not the client. Data integrity and security is especially suited for processing by the server because the server provides a central place for rule definition and loop-up.

Your reply is to hide behind the misleading, ambiguous and self-serving interests of the vendors, who happen to also be your advertisers.

Please show more leadership in the use of and definition of the various technical terms that are cogently developed only to be uncritically perverted for deviate co-option.

Frederich Koenig
Fairfax, Calif.

Excel 3.0 recalc speed slower than claimed

I got the $129 upgrade to Excel 3.0 based primarily on your news story (MacWEEK, Jan. 15). The various bells and whistles available in the new version appeared interesting, and now that I have them, I can state that they do make life a bit easier. But where Version 2.2 of Excel was really lacking was recalculation speed, especially compared with Informix Software Inc.'s Wingz. So after reading such phrases as "supercharged" and "100 times faster" in your story, I figured that I'd gain a substantial increase in performance with the new version even if it were only half as good as touted in the story.

Well, I got the upgrade, and I'm running it on an SE/30 with a math coprocessor installed. How about if you do me a favor: I'll send you my $129 Excel 3.0 upgrade and you send me the one that's "100 times faster."

John A. Craig, banking officer
Mellon Bank, Georgetown, Del.

Considering that the performance claims you cite were clearly attributed to Microsoft, it is probably better-suited to address your performance complaints to Microsoft. You'll find benchmarks in our May 21 review that clearly show how Excel 3.0's recalculation speed stacks up. — Ed.

States should keep hands off software developers

Regarding the New Jersey Assembly Bill 4414 (MacWEEK, Aug. 6):

An ominous event has occurred in New Jersey. A bill that would require the licensing of software developers has been adopted. If other states adopt similar measures, it will spell the ruin of the computer-software market as well as the livelihood of current and would-be developers.

This bill is categorically ridiculous. It shows an indifference to and lack of understanding of the software-development process and the software market. It will no more protect consumers against bad software than the licensing of artists would protect consumers from bad art. Consumers already "license" with their pocketbooks. No software developer who markets bad software lasts long. Furthermore, there are already organizations such as the Software Publishers Association that are protecting consumers and forcing more responsibility on developers.

By what standard will potential licensees be measured? Who will be the ordained that will have the power to grant licenses? Software development is such a complex process that it defies simple standards for "good" and "bad." The software industry has been pioneered and driven by unconventional entrepreneurs who take chances and step outside conventional "standards." Licensing will kill this spirit.

This tide must be stopped. Every single software developer must give

GORDON STUDER

this incident the full weight that it deserves. Their livelihood and the industry's livelihood depend on it.

Yes, there are problems in the software-development industry, but the licensing of software developers will do nothing to alleviate them and, in fact, will make them worse.

Jordan Zimmerman, Les Vogel III, Donald Martin Gipson, Bruce Holloway, Susan Rinderknecht, Craig Krantz, Liz Winterform, Devon Kemp, software developers
Cupertino, Calif.

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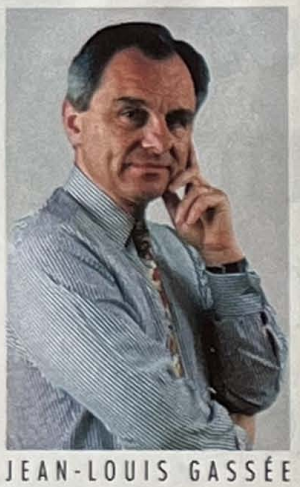


JEAN-LOUIS GASSÉE

It is obvious the Apple executive really meant to say: 'We are mad as hell, and we won't take it anymore. We are going to expose Windows for what it is, better than DOS, but a lot less than the Mac.'

Commentary

Apple is taking off the gloves, seriously

At a recent industry conference, an Apple executive lamented that for all its innovation, the Macintosh had gained the company but a smallish market share. True, the Mac brought many innovations to the marketplace. True again, the oracular market share predictions of its mercurial godfather did not come to pass.

Macintosh was to be the first personal computer in history to sell a million units in its first year. Instead, it failed to gain the kind of dominant position the Apple II enjoyed at one time.

So? Are we dealing with a common, sobering observation or is there a hidden agenda in the executive pronouncement? I will choose the latter. I want to believe we are staring at an artfully encoded preannouncement of a new era in Apple marketing.

It is obvious the Apple executive really meant to say: "We are mad as hell, and we won't take it anymore. We are going to expose Windows for what it is, better than DOS, but a lot less than the Mac." Microsoft Chairman Bill Gates was in the room. That's why, to preserve Bill's fragile ego, a kinder, gentler statement was used instead of a declaration of war.

This means war. A war it is, and in years past Apple has been most chivalrous in refusing to abuse an unfair advantage when all the opposition had was DOS 3.3 to line up against the Macintosh. Apple stoically refused to unleash its marketing warheads, as the false prophets of character-based DOS clones claimed superiority. And when the inferior imitator Windows, preannounced in the fall of 1983, finally shipped in 1990, Apple did the only Christian thing to do; it turned the other cheek and published ads touting the Macintosh as "your next DOS machine." Yes, there is the legal skirmish, but no marketing to nuke Windows.

Yet, it must be terribly tempting. And it must be the new Macintosh PowerBooks that finally drove the Apple executive to conclude that the meek won't necessarily inherit the marketplace, especially if Bill Gates takes it first.

Imagine the following parallel experiences: putting together a Windows notebook system and a Mac PowerBook. How hard it must be to exercise restraint when the Mac's advantages are exacerbated by the demands of the notebook genre. It all starts with pointing devices: How many of the opposition's portables have an integrated trackball, let alone the unfairly ergonomic implementation on the new Macs?

Doing Windows. But this is a quibble when compared with the process of installing DOS and Windows. Nothing illustrates the opportunities better than the contortions required to deal with the age-old 640K memory limit and still manage those megabytes required for Windows.

I'll just quote one example: "EMM386.SYS allows MS-DOS programs that use expanded memory to use the extended memory in your computer as expanded memory." The situation gets really interesting when you want to go back and modify your system, install some modem, another mouse, or something goes wrong. You're now staring at files such as the famous CONFIG.SYS and AUTOEXEC.BAT, now joined by SYSTEM.INI and WIN.INI containing statements like shell=\bin\command.com c:\bin /e:256/p, one of my favorites. No Finder, no System folder you can inspect, no dragging items in and out, no trash can.

Inferiority complex. Apple's generosity boggles the mind when you experience the many ways in which Windows provides an inferior desktop environment to what the Mac has been offering for years. And we could go on and on — look at how Windows prints compared with what the Mac environment offers, or how it networks compared with AppleShare. See how fast reading a remote directory is with Windows and LAN Manager, even with Ethernet. See how the new portables connect on a network, directly to a desktop machine or remotely over the phone. That's something the Windows competitors will have a hard time with.

These are but a few examples of the arsenal Apple executives have been quietly accumulating. Finally, all the time spent using and analyzing the competition's product is about to pay off. There is a rumor, not to be believed, that Peter Norton has been hired as a Personal Windows Trainer in an effort to bring the higher ranks of the company to maximum marketing battle fitness.

We heard it. Apple is tired of its altruistic behavior in the marketplace. The gloves are coming off. Yes? □

MacTOON

"Undo!"

The Mac Manager

Does upgrading have to mean upsizing?

About two weeks from now Apple will put on its own little dog-and-pony show within that largest of computer marketing venues — Comdex/Fall '91 in Las Vegas. If you've been following the pages of MacWEEK, you already know which CPUs Apple will announce — the Classic II, 68040-based Quadras and the PowerBook notebooks. None of these machines is revolutionary. They are merely the logical extension of today's Mac architecture, made faster and more cost-effective. But do you buy them? And if so, which ones?

What's in it for you? Although pricing is still speculative, all the reports indicate that the Quadras, which are the new high-end office machines, will come in under $9,000 (for the Quadra 900 tower model). The most expensive PowerBook (the 170 with the 25-MHz '030 and 40-Mbyte hard disk) will list for less than $4,500. The '030-based Classic II should list for less than $1,500.

Mac managers could find that, despite the recession, fourth quarter 1991 will be an excellent time to replace your tired old Mac iron with something new.

But just how new should new Macs be? If Crabb's Cracker Barrel gang of managers is any indication, many people like the new machines because they force Apple to squeeze prices lower on the Macs they now consider mainstream — the IIsi and IIci.

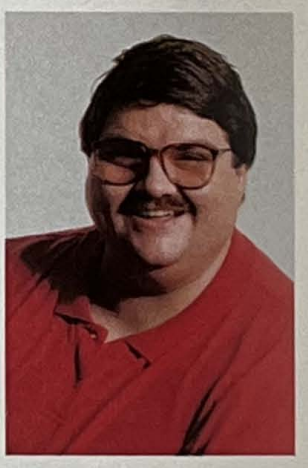
As one Mac manager told me: "Do I really need '040s for most of my Mac users? No. I just need a convenient, reasonably fast, reasonably expandable Mac to replace my old Pluses and SEs. For my shop, that would be the IIsi and IIci. If I can get them cheaper, so much the better."

A lot of Mac managers tell me they think the same way. They view the IIsi and IIci as office workhorses and the new machines as frills. While I can't argue that the IIsi and IIci are solid office machines, I suggest it's time to reconsider just what an office Mac looks like and is supposed to do. I suggest we look at Apple's upcoming PowerBook 140 and 170 notebooks as alternatives to the IIsi and IIci.

Redefining the desktop. The Mac was created with the idea of accenting your desktop, not overwhelming it. The original beige toaster didn't have much of a footprint, yet it managed to give us a lot of computing. Since then, Macs have gotten a lot bigger, to the point where we now can look forward to the Quadra 900, which packs all of its electro-gimcrackery in a tower case that sets on the floor. (Can you say MicroVax?)

But I think the PowerBooks mark the first real chance for Apple to redefine the office desktop computer since the original Mac hit the Formica. These aren't just for traveling. Instead, they bring new meaning to the adage, "less is more," especially for office computing.

The PowerBook alternative. What do we require from most office Macs? System 7.0 compatibility? The PowerBook 140 and 170 have that, supporting 32-bit addressing and virtual memory.



DON CRABB

How expandable are those two notebooks? You can add memory and larger internal hard disks. True enough, the PowerBook 140 and 170 lack traditional NuBus slots. But they do have a SCSI port or serial ports, which Macs traditionally have used for expansion, rather than the old IBM PC way of adding cards inside the box.

A slew of third-party vendors has already announced such goodies as Ethernet, token-ring and even 3270 networking support through the PowerBooks' SCSI port. And the notebooks' SCSI port offers the same access to external disks, scanners and so on as on any other Mac. The same holds true for their serial-port connection options.

And that means these notebook Macs offer obtrusive computing power and expansibility for the office. Compared with them, the IIsi and IIci are behemoths. □

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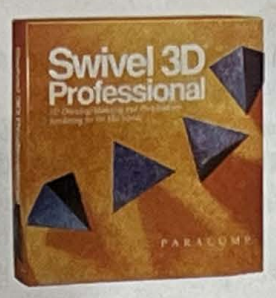
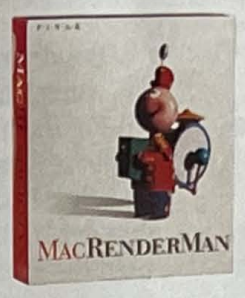
Only $175



Swivel 3D™ Professional 2.0
$695 retail price

+



MacRenderMan™
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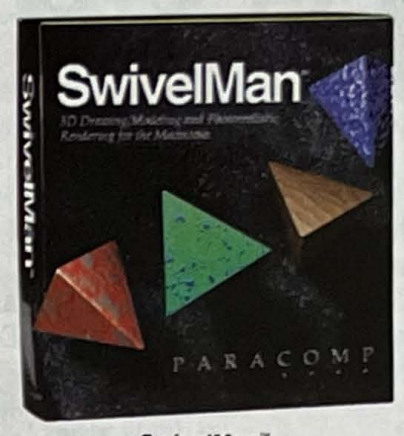

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SwivelMan brings together the best Macintosh™ modeling and rendering programs:
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They laughed when I brought in my own database, but everyone's smiling now.

Okay, so maybe I'm not in MIS, but I grinned and loaded FoxBASE+/Mac.®

The next day, I showed them a sample of their PC inventory database with not just how much of anything we had, but with pictures showing exactly what it looked like.

I ran their dBASE sales analysis program (using a couple of new Mac screens I whipped out) as they watched FoxBASE+/Mac scream through the numbers.

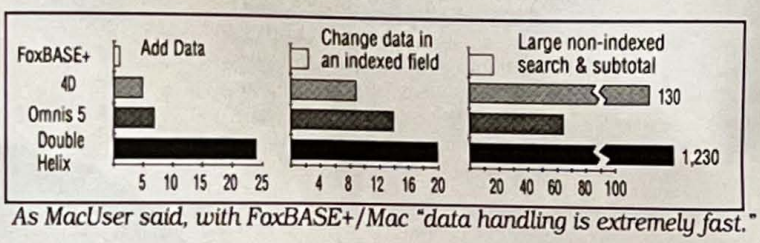
And then I showed them the kinds of reports they could get, using data stored in Fox or dBASE IV/III+ files on the PC.

You could have heard a pin drop.

Then they were all over me with questions, so I just handed them the FoxBASE+/Mac manuals and smiled.

Besides not being in MIS, I'm not a professional programmer, so you can tell how easy FoxBASE+/Mac is.

For the inventory system, I just used FoxBASE+/Mac to read the database files they had on the PC (it reads Fox and dBASE IV/III+ files directly). I added a memo field into which I cut and pasted pictures that our DTP department had for our customer literature. Then I used the MacDraw-like screen painter to create a great color Mac output screen.



As MacUser said, with FoxBASE+/Mac "data handling is extremely fast."

The sales analysis was easy, too. I had to create new screens but FoxBASE+/Mac ran the rest of the dBASE III+ program just fine. (It typically runs as much as 95% of standard FoxBASE+/PC and dBASE III+ code with no changes.)

And I built the reports I showed them from scratch. With no programming at all.

If you're looking for a better way to manage your data, call Fox Software and ask for their free demo. It limits the number of records you can store, but is the full program, so you can check it all out for yourself on your applications.

Around here, MIS has been pretty busy the last few weeks. They've hooked up Macs and PCs on an Ethernet network and our information and data processing systems are looking great.

They're building Hypercard-like applications I see people using all over the place.

Accounting likes all of this because the single-user version lists for $495, and the unlimited Multi-User version is only $695.

And even the PC programmers are happy. I hear them talking about things like the great trace and debugging facilities, adding XCMDs and XFCNs, the dBASE-like programming language, System 7 compatibility, full file and record locking in the multi-user version, and how FoxBASE+/Mac is "so astoundingly fast for a Mac."

Everyone seems to be laughing more now, too.

Call 1-800-837-FOX2 or 419-874-0162 today for a free, full-featured demo.

(Ask for Offer MWK-910)

FoxBASE+/Mac™

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Reviews

- ShowPlace. See Page 54.
- MachTen. See Page 58.
- EPlanner. See Page 58.
- In Brief: EPS Exchange. See Page 60.

PowerCard charges up performance

By Jonathan A. Oski

The Mac is tackling many tasks that were not thought possible just a couple of years ago, but there are many areas where timesaving improvements are still sorely needed. DayStar Digital Inc. recently introduced the RAM PowerCard for Macintosh NuBus.

Targeted at applications with high I/O requirements, such as raster-image processing, multimedia, photo imaging, graphics manipulation, software development and database manipulation, multiple RAM PowerCards can be combined to add up to 1.25 Gbytes of RAM-disk space. This disk can be partitioned to provide System 7.0 virtual memory, which is significantly faster than that using conventional rigid disks. Also, unlike volatile motherboard-based RAM disks, the RAM PowerCard preserves data in the event of a system restart or crash.

SCORE CARD
RAM PowerCard

MacWEEK

Overall value	●
Performance	●
Features	●
Installation/configuration	●
Compatibility	●
Documentation/support	●
List price	$649

● Excellent ● Very good ● Good ● Average ○ Below average

ON BALANCE
RAM PowerCard
DayStar Digital Inc.

MacWEEK

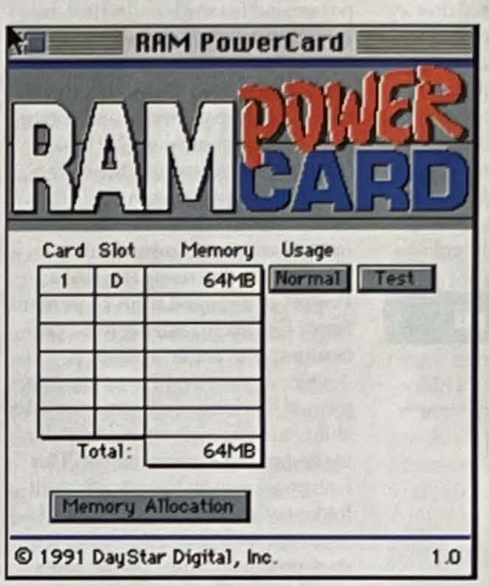
The RAM PowerCard provides relief to users groping with the high I/O demands of color pre-press, photo-image editing and other applications. Providing a non-volatile RAM disk that can be used as System 7.0 virtual memory, the RAM PowerCard's flexible configuration options are very good. Performance exceeds that of any currently available disk-based technology, but many users will find their money better spent investing in motherboard RAM.

Configuring the RAM PowerCard. Random access memory, which is much faster than any high-performance disk system, can be used to speed up many applications that are choked by current I/O bottlenecks. The RAM PowerCard is priced at $649 with no RAM installed and is geared for those users who spend much of their time waiting while their Mac chugs through disk-intensive tasks. Each RAM PowerCard can be configured in up to 19 different configurations, depending on the distribution and size of the RAM on the card's four SIMM (single in-line memory module) banks.

There are two varieties of the RAM PowerCard, based on SIMM orientation. One with diagonally mounted SIMMs can accommodate 1-, 2- and 4-Mbyte SIMMs. The other accommodates horizontally mounted 16-Mbyte composite SIMMs in addition to the smaller capacity SIMMs. Each card type is priced identically, and DayStar will exchange board types free of charge should you outgrow the capacity of a card designed for diagonally mounted SIMMs.

Installation. Although DayStar initially planned to sell preconfigured boards, the RAM PowerCard is now sold solely without RAM. The company is selling the rare 16-Mbyte composite SIMMs to use with the card; other SIMM types need to be purchased separately and installed by the user. Fortunately, the PowerCard's manual details the installation procedures very well. DayStar urges you to take necessary measures to avoid damage from static electricity, and provides a disposable wrist grounding strap as an extra precaution.

Installation is completed by placing a control panel in your System folder. The control panel allows you to fully test the card and the RAM installed on it. You also can configure the PowerCard's RAM to be partitioned in either single or multiple RAM-disk volumes.



The RAM PowerCard control panel shows the total number of RAM PowerCards installed and the amount of memory on each card. It allows you to configure and test the RAM on the cards.

Performance. Macintosh I/O performance is dependent on a variety of parameters, including SCSI chip sets, disk drivers, disk-drive throughput and CPU speed. Limitations in the current Mac architecture coupled with the limited availability of very high-performance disk systems have dictated the degree to which the Mac can be used in some I/O-intensive applications, such as photo imaging and graphics manipulation. Although the Mac's NuBus also imposes some constraints on I/O bandwidth, very few products stress these restrictions.

We tested the performance of the RAM PowerCard using FWB Inc.'s

See PowerCard, next page

Intuit's Quicken 3.0 picks up speed, excels at checkbook management

By Scott Beamer

Low price and ease of use have made Quicken from Intuit the best-selling personal financial management software on Macs and IBM PCs and compatibles. Intuit has added a host of features to Quicken 3.0 to challenge the best in its class.

But while Intuit claims Quicken can keep the books for most small businesses, it remains mainly a checkbook manager suitable only for managing the simplest of books. It is by no means a full-fledged accounting system.

What's new in 3.0. New features in Quicken 3.0 include new account types, multiple accounts per file, more transaction-classification tools, easier data entry, direct editing of the check register, better reports, access to Checkfree Corp.'s electronic bill-paying service and improved business features.

Not included in this version, however, is the Investment Account type offered in Quicken 4.0 for the PC, which provides an investment register, suitable for tracking stocks and other investments.

Quicken is priced at $69.95; upgrades to registered users are $24.95, plus shipping and handling.

Added muscle. Previously, Quicken was capable of handling only one bank account per file. Intuit has added new account types — including credit cards, cash, assets and liabilities — to savings and checking; and it can handle up to 256 accounts per file.

Transactions now can be classified by category and subcategory, as well as by class and subclass. For example, the category Utilities could include Water, Power and Gas as subcategories; records might further be classified as belonging to different properties.

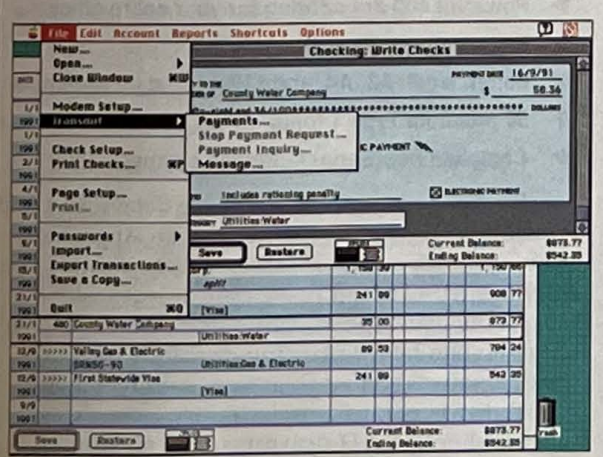
Transactions now can be entered or edited directly in the Check Register without having to use an intermediate window. Of course, users still can write checks on a screen that looks like a check.

Any transaction can be memorized with a mouse click. Choosing an item on the Memorized List makes a duplicate transaction in the Check Register, adds the current date, increments the check number and highlights the amount, allowing you to change it easily, if need be. This is a highly efficient way to enter repetitive transactions.

With a product like Quicken, you spend most of your time performing data entry, and Version 3.0 makes this very easy; virtually every action can be accomplished from the keyboard. Windows, rather than modal dialog boxes, hold most of the data, so you can keep necessary lists of categories or memorized transactions open all the time.

Quicken works on any Mac with at least 1 Mbyte of memory, and operating systems as old as System

See Quicken, Page 53



Quicken 3.0 offers users access to Checkfree, an electronic bill-paying service. Choosing File/Transmit/Payments sends payments via modem to Checkfree on the appropriate date.

SCORE CARD
Quicken 3.0

MacWEEK

Overall value	●
Performance	●
Features	●
Ease of use	●
Documentation/support	●
List price	$69.95*

● Excellent ● Very good ● Good ● Average ○ Below average

**Upgrades, $24.95 plus shipping and handling.*

ON BALANCE
Quicken 3.0
Intuit

MacWEEK

Quicken 3.0 is an impressive upgrade to this bestselling personal finance manager, but (despite Intuit's claims) it is unsuitable for all but the simplest business accounting. It now offers multiple accounts in one file, improved reporting and access to electronic bill paying. Data import and export is difficult and tedious, and investment accounting is still missing. As a personal money manager, however, Quicken remains an outstanding value.

PowerCard

From previous page

Hard Disk ToolKit BenchTest 1.0 and Adobe Systems Inc.'s Photoshop 2.0, and compared it to both motherboard RAM and conventional disk technology. The RAM PowerCard performed four to six-and-a-half times better than the Quantum Corp. 210-, 170-, 105- and 80-Mbyte ProDrives we tested in terms of sustained reads and writes. Reaching the limits of the NuBus, the RAM PowerCard was able to sustain 4.473 Mbytes per second on reads and 4.985 Mbytes per second on writes. The RAM disk using motherboard-based RAM exhibited significantly faster performance, posting 7.655 Mbytes per second and 5.851 Mbytes per second for reads and writes, respectively (see benchmarks at right).

As a measure of real-world performance, we compared the times required to open, resize and rotate a 14-Mbyte Photoshop 2.0 image. We had Photoshop use the different media types as its virtual-memory swap area to see the effect on performance. Improvements witnessed when using the RAM PowerCard ranged from 17 percent faster for image resizing to 57 percent faster to rotate an image.

Overall, the RAM PowerCard performed flawlessly during our tests. Its ability to retain data stored on it during restarts is very convenient. This feature allows you to copy a System folder to the RAM disk and restart your Mac with the RAM disk as the start-up disk, pushing performance even higher. The board's firmware also will warn you each time that you shut down your Mac that anything stored on the RAM disk will be lost, another nice precautionary feature.

Conclusions. While many would jump at the chance to cut their processing times in half, you may be slowed by the cost of the RAM PowerCard. Although the price of the card itself is relatively inexpensive, filling it with 64 Mytes of RAM will cost somewhere in the neighborhood of $2,200 if you are willing to populate the board with commodity mail-order RAM. The board's flexible configuration options, however, allow you to outfit it at a pace that suits your budget (see table at left).

Although we don't think that the PowerCard is necessarily a mass-market product, the Mac needs products like it in order to make it a viable platform for time-critical, I/O-intensive applications. Motherboard RAM can be expanded to provide similar benefits, but it will lack some of the PowerCard's non-volatility on crashes and restarts, and thus we recommend the PowerCard as a more reliable approach to adding high-speed electronic storage or virtual memory.

Users willing to spend a lot of money on RAM may be tempted to put it directly on their motherboard to achieve a broader range of benefits of enlarged application memory and cache space. Motherboard RAM can be accessed faster than NuBus-based RAM. This speed advantage has its price in volatility. The security of surviving crashes and restarts is one of the RAM PowerCards subtlest yet most important benefits. Its flexibility and solid, no-nonsense performance can help the Mac break into markets where high-speed, non-volatile memory and storage is a requirement.

DayStar Digital Inc. is at 5556 Atlanta Highway, Flowery Branch, Ga. 30542. Phone (404) 967-2077 or (800) 962-2077; fax (404) 967-3018. □

RAM PowerCard

Mbytes	STREET PRICE
16	$1,263
32	$2,071
64	$3,005
128	$8,671
256	$16,663

This table prices various configurations of DayStar Digital's RAM PowerCard with RAM installed. The price column includes the $649 cost of the RAM PowerCard. RAM street prices were taken from a sample of mail-order merchants during the week of Sept 17. The numbers shown are for comparison purposes only.

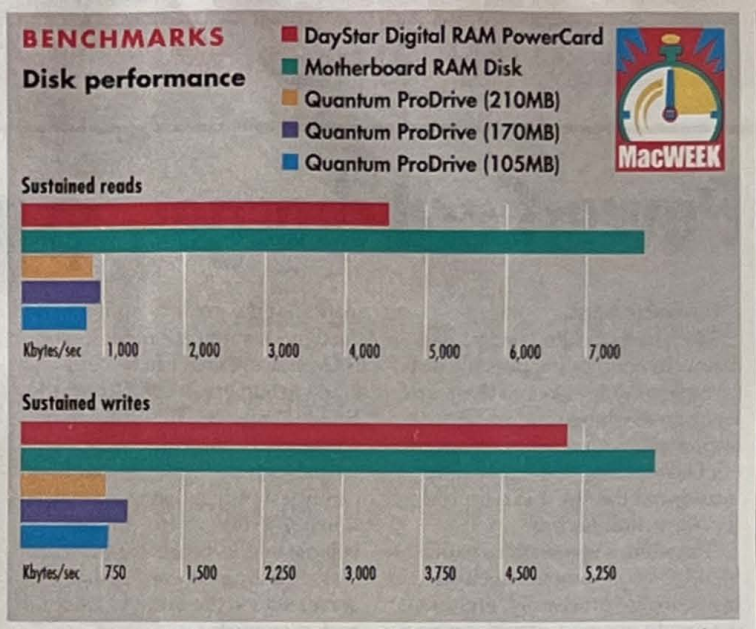
SYSTEM 7 COMPATIBILITY

RAM PowerCard	
Balloon help	Yes*
TrueType	n/a
Publish and subscribe	n/a
Apple events	n/a
32-bit addressing**	Yes

**In control panel. **According to vendor.*

BENCHMARKS

Disk performance



This data illustrates the drives' maximum sequential data transfer rate, in Kbytes per second. FWB Inc.'s Hard Disk Toolkit Benchmark program, used in this test, performs 20 768-Kbyte reads and writes and times each transaction to determine the drive's average data transfer rates. During the test, large amounts of data are transferred so a drive's seek time and rotational latency have little effect on the results of this test. Tests were performed on a Macintosh IIci with 8 Mbytes of RAM, DayStar Digital PowerCache IIci, Radius Color Pivot and running System 7.0.

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Increase resolution, decrease delays, and add flexibility to your entire Macintosh AppleTalk network with a **LaserMaster 400XL** printer. The 400XL's RISC-based processor dramatically increases print speed, while its powerful engine handles the heavy printing demands of your entire networked work group. And its paper flexibility is great for newsletters, posters, spreadsheets, CAD drawings, and all your oversized jobs.

Quicken

From Page 51

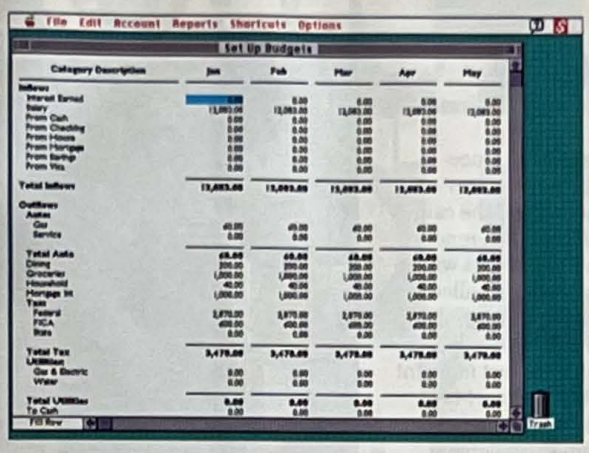
4.1 are supported. It is 32-bit-clean, according to Intuit, and it supports TrueType fonts. It ran normally under System 7.0.

Paper-free office. For users willing to pay to save trees, Quicken 3.0 lets you subscribe to the Checkfree bill-paying service. Bills are entered into a special account and transmitted via modem by Quicken. Checkfree waits until the specified date on each transaction, then automatically pays the appropriate bills from your bank account. Quicken users pay Checkfree $9.95 per month for up to 20 transactions; 10 additional transactions cost $3.50.

For those not ready to pay their bills electronically, Intuit sells both dot-matrix and laser-printer checks.

BillMinder, a separate application included with Quicken, can be set to remind the user which bills are due when their Mac starts up or when Quicken is launched. Recurring transactions also can be grouped, for example, as monthly bills or payroll.

Report-writing capabilities in Quicken 3.0 are vastly superior to those in previous versions. Quicken contains long lists of standard reports for both home and business, which can be modified to create custom reports. Fonts and styles can be changed throughout reports, as well as on checks.



Budget planning in Quicken 3.0 is done in a new spreadsheet-style window. Amounts can be entered individually by month or once for the entire year.

Budget planning is done in an innovative, editable window that resembles a spreadsheet. Reports can be viewed on screen; printed; or saved to disk as text, SYLK or in the Standard Tax Data format developed by SoftView Inc. for its MacInTax package. (Future versions of MacInTax will be offered by ChipSoft Inc., which acquired SoftView earlier this year.)

Export hitches. Both data import and export are supported by Quicken, and the manual has frequent suggestions of when it might be appropriate to use these functions.

Transactions from other software, saved as text, can be imported by Quicken. But to do so, users must first restructure the data to fit Quicken's proprietary file format, QIF. This is explained in the manual, but it is a job for power computer users. Files can be exchanged between the PC and Mac versions of Quicken, but this also is a difficult chore, and exporting data to MacInTax is likewise a tedious procedure.

Business applications. While Intuit states that more than half of its customers use Quicken to keep books for small businesses, Quicken is an electronic checkbook, not an accounting package.

Quicken was not designed to imitate the standard journal and ledger system that is the basis of all Mac accounting software. While this makes the package very easy to use in some circumstances, it makes it very easy to make a mess out of the books in others. It is possible to modify any transaction at any time. One can even modify or delete categories — including those that contain transactions — and it is possible to save transactions without ascribing them to any category.

Also, Quicken does not offer many of the standard capabilities found in Mac accounting packages. It cannot, for example, write receipts, invoices, statements, bills or purchase orders.

While Intuit advertises payroll and job costing among Quicken's new capabilities, there are no special facilities in the software related to this, only elaborate work-arounds described in the manual.

Although many small businesses are essentially run from a checkbook, those businesses not sure of their accounting needs should certainly consult with an accountant before deciding on Quicken or any other bookkeeping software.

A bargain computer book. Quicken's manual is larger and better-written than some computer books costing more than Quicken's street price. It has an unusually elaborate index and is well-illustrated.

On-line help is context-sensitive and features hypertext-style links. Technical support is free with a toll call, and the lines are open from 5 a.m. to 5 p.m. PST.

Conclusions. This new version of Quicken is a substantial improvement and is a first-rate piece of software for managing personal finances. Some of its features, such as transferring data to tax software, however, will prove too complex or tedious for the vast majority of users.

We advise caution and a discussion with an accountant before deciding on Quicken to keep the books for a business. There are valid reasons why the least expensive accounting software is several times more expensive than Quicken — and more complex as well.

Intuit is at 155 Linfield Ave., P.O. Box 3014, Menlo Park, Calif. 94026. Phone (415) 322-0573 or (800) 624-8742; fax (415) 322-1597. □

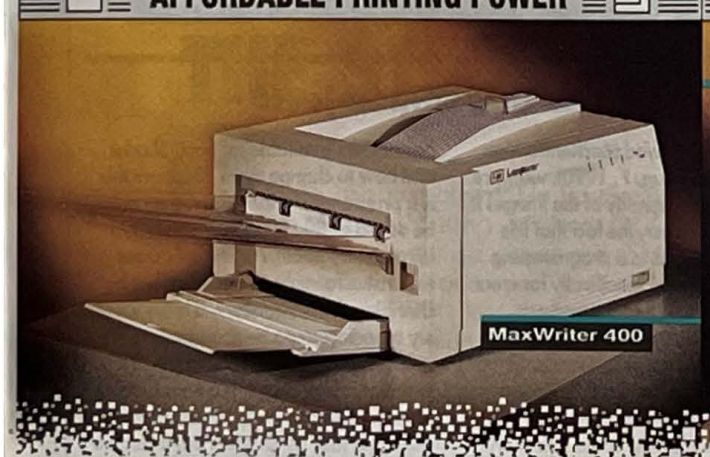
SYSTEM 7 COMPATIBILITY

Quicken 3.0	
Balloon help	No
TrueType	Yes
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor.

IS JUST ONE OF THE ADVANTAGES.

AFFORDABLE PRINTING POWER



- 400 dpi high resolution in a desktop machine
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Don't let a tight budget limit your choices of a high-performance laser printer. The **MaxWriter 400** provides nearly twice the resolution of standard 300-dpi laser printers at an amazingly affordable price. And while the MaxWriter 400 is small enough to fit on your desktop, it gives you the speed, font versatility, and paper flexibility usually found only in bigger, more expensive printers.

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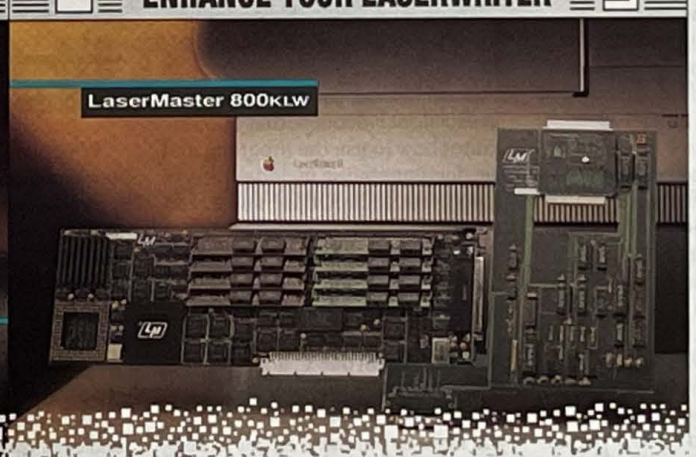

- 800 dpi high-res boost for your *current* laser printer
- 32-bit RISC-based processor accelerates print speed
- Six megabytes of high-speed memory
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ShowPlace brings 3-D into view

ShowPlace, a set builder and renderer from Pixar, uses prebuilt models, providing an easy-to-use interface for the creation of 3-D scenes.

By Michael Murie

ShowPlace, Pixar's latest release in the Macintosh rendering market, allows users to create photo-realistic 3-D scenes using prebuilt models. Though it is not a modeler, ShowPlace comes with a collection of 3-D ClipObjects and a library of Shaders (called Looks) that create the surfaces of objects during rendering.

ShowPlace displays its 3-D world with the Camera view. The position and orientation of the Camera can be saved in the Camera menu, providing a quick way to return to a desired location. The Camera menu has five preset views and a Look At Selection option that points the Camera at the currently selected object.

The application requires a Macintosh II with a floating-point coprocessor and System 6.0.3 or greater.

The tools. Four separate toolboxes allow you to move, rotate and scale objects; apply surfaces to objects; control light sources; and move the Camera. ShowPlace stacks these toolboxes on top of each other, with a mini-icon protruding from each so that you can switch between them.

Four kinds of light sources are available: Ambient, Point, Distant and Spotlight. The intensity and color of each can be adjusted. ShowPlace adds an unusual method for aligning spotlights: You position the camera where you want the light located and save that view; the position of the light is then swapped with the Camera's position.

Objects created in modeling programs that support the RIB (RenderMan Interface Bytestream) format are imported directly through the File menu. ClipObjects — a collection of simple and complex objects, such as Sphere, Cone, Cup and Bag — are placed into the program using the Librarian, which is a separate program that also is used to select surfaces.

ShowPlace's Looks are programs that apply surfaces to an object. While Pixar intended Looks to be easy to use, access to Shader parameters is obscure.

The LabelMaker utility creates new surfaces from PICT files or text. Plain Labels completely cover the surface of the object, while Decals allow the surface beneath to show through.

When an object is selected, a bounding box appears, with the x, y, z axes labeled. There are also three constraint handles and a center point. Clicking the constraint handles on and off determines on which axes the object will move. This seems like a simple approach, but unfortunately, with large objects the handles sometimes go beyond the edges of the window.

Rendering options. Once objects are imported, surfaces applied, lights added and the camera positioned, it is time to render the scene. ShowPlace comes with a medium-quality renderer called DraftRMan. Pixar originally intended to sell ShowPlace with only DraftRMan, but at the last moment it also bundled MacRenderMan.

Pixar uses the background-printing paradigm to implement its rendering system. RenderMonitor runs in the background and displays the status of the rendering tasks. The separate renderers appear, and they are selected in the Chooser. When ShowPlace needs to render a file, it places the file in the rendering queue.

Unfortunately, this design adds a level of complexity that is beyond the intention of ShowPlace's otherwise simple interface. Specifically, choosing a renderer is not an obvious function. Allocating memory to the background task is difficult and confusing. Even worse, RenderMonitor immediately quits when it generates an error, and it has a tendency to freeze up.

ShowPlace's interface is geared toward the novice 3-D user. The Camera movement tools are very sophisticated and fluid, making Cameras easy to position. But there are several annoyances: When the surface toolbox is active, you cannot add a new object; and clicking a tool in the current toolbox doesn't activate the tool if the program is busy redrawing the scene. This problem forced us to constantly reselect tools.

There is no facility for grouping objects, and ShowPlace cannot be used to create animation.

However, the package includes an excellent videotape that demonstrates how to use the program, and the documentation includes pictures of each ClipObject and Look.

Conclusions. ShowPlace provides an easy-to-use interface for creating RenderMan images, and the library of ClipObjects and surfaces allows anyone to get started. Users, however, will quickly exhaust the starter collection and will need to purchase either a modeling program or more ClipObjects.

Pixar is at 1001 W. Cutting Blvd., Richmond, Calif. 94804. Phone (510) 236-4000; fax (510) 236-0388. □

SCORE CARD
ShowPlace

MacWEEK

Overall value	⊙
Performance	⊙
Features	⊙
Ease of use	●
Documentation/support	●
List price	$995

● Excellent ● Very good ● Good ⊙ Average ○ Below average

ON BALANCE
ShowPlace
Pixar

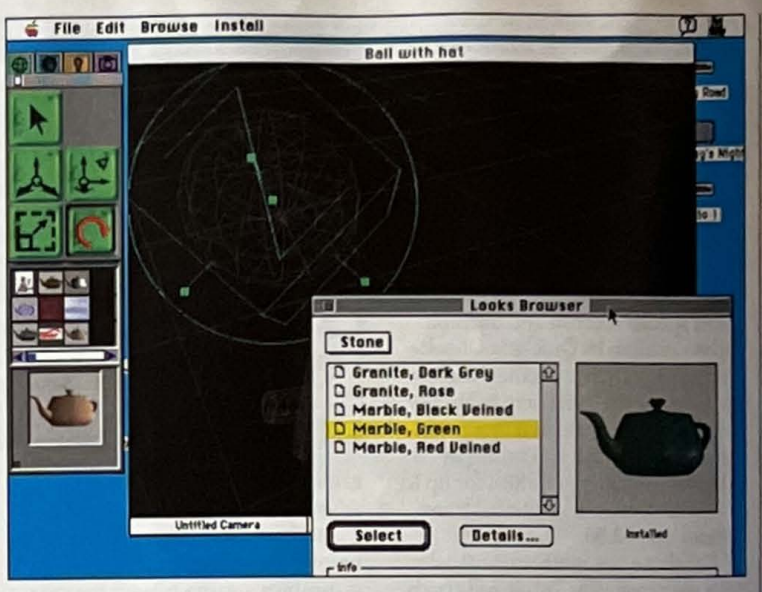
MacWEEK

Showplace is a set builder and renderer that lets you place prebuilt models and create photo-realistic scenes. It uses its own renderer or MacRenderMan, which is bundled with the package. The application strives for an easy-to-use interface and is designed for novice 3-D builders, but some features fall short of this goal. Serious users will soon exhaust the included ClipObjects and will need to invest in a modeling package or more objects.

SYSTEM 7 COMPATIBILITY

ShowPlace	
Balloon help	No
TrueType	n/a
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor.



The ShowPlace View window keeps the four toolboxes stacked on top of each other. The sphere shows the handles that are used to restrict movement of an object to defined axes. The Looks Browser librarian window (bottom) is where the surface characteristics of an object are selected.

You can quickly access ShowPlace's tool palettes by clicking on a small tab at the top. The palettes can be used to apply rotation, placement, lighting and surfaces to rendered scenes.

Shaders, Looks and ClipObjects

When we reviewed MacRenderMan (see MacWEEK, Aug. 7, 1990), we were impressed by the quality of the images it produced. However, the fact that it is really the front end to a programming language designed specifically for creating photo-realistic images made us wonder how many people would use the program. At the time, Pixar said that several modeling programs soon would support MacRenderMan, and that Pixar and other companies would follow with Shaders. (Shaders are stand-alone routines that are used by the renderer to simulate object surfaces.)

One year later, the only Macintosh programs that can create models for MacRenderMan are Presenter Professional from Visual Information Development Inc. of La Puente, Calif., and Swivel 3D Professional from Paracomp Inc. of San Francisco. There has been even less action in the Shader market, but things are changing.

The VALIS Group Inc. has just released a collection of Shaders called VG Shaders. The collection consists of 17 surfaces, such as Tortoise Shell, Bumpy Glass, Redwood, Oak and Crayon. The documentation describes the parameters available for each Shader, and how to change them. (Because this is a programming language, they must be edited as text files.) At $495 ($395 introductory price) VG Shaders seem expensive for only 17 surfaces, but by changing the parameters, a huge variety of surfaces can be produced.

ShowPlace added a twist to MacRenderMan by creating a new class of Shader, called a Look. Looks perform the same task as Shaders but include a thumbnail picture of the effect, which is displayed in the Librarian utility. Unfortunately, ShowPlace does not provide an easy-to-use method of adjusting Shader parameters. The VALIS Group includes Looks for its Shaders.

Third parties are also scrambling to produce libraries of ClipObjects for ShowPlace. Three sets of Acuris Inc.'s ClipModels are expected sometime in November for less than $200 each.

The VALIS Group Inc. is at P.O. Box 422, Point Richmond, Calif. 94807-0422. Phone (510) 236-4142; fax (510) 236-0388. Acuris Inc. is at 35468 Purcell Place, Fremont, Calif. 94536-3329. Phone (510) 793-8332; fax (510) 795-1104. — By Michael Murie

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Source code: 11210H

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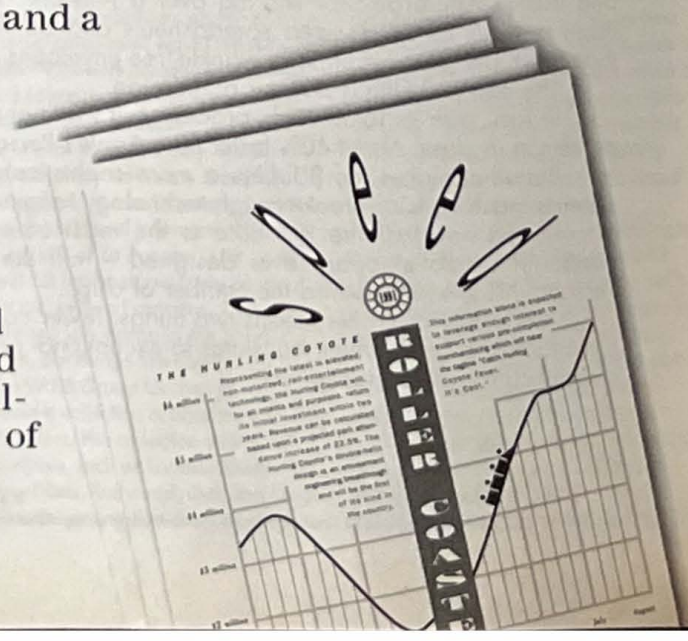

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MachTen makes many Macs Unix machines

True BSD Unix is impressive in its capability to run alongside the Finder and most applications, and runs on any Mac with 4 Mbytes.

By Alexis Rosen

MachTen 1.0.1 from Tenon Intersystems is a Berkeley Standard Distribution (BSD) Unix built on Carnegie-Mellon University's Mach 2.5 kernel. Running on a Mac, that's impressive enough, but this Unix runs alongside the Finder and most Mac applications. Furthermore, it will run on any Mac with 4 Mbytes of RAM. In some ways, MachTen, which costs $595 or $835 depending on your Mac configuration, is similar to Apple's A/UX, which costs $795 or $995; however, MachTen differs strongly enough that it will serve a separate set of users.

MachTen as Unix. MachTen runs on top of the Mac operating system (Version 6.0.3 or higher), whereas A/UX runs the Mac OS as a Unix process.

MachTen runs on any Mac from the Plus on up, but it does not enforce Unix's memory protection or use Unix virtual memory — even on Macs with PMMUs (paged memory management units). This makes it possible for crashing programs to bring down the entire system, but that's the way the Mac has always worked.

MachTen also does not include a C compiler or associated utilities. Prerelease versions of the development system, including the GNU C compiler, look good. According to the company, it should be available this November.

Aside from these limitations, the slim, 11.5-Mbyte MachTen is an almost-complete port of BSD 4.3-Reno; the standard networking, text processing, administrative and user commands are provided. One casualty is the Korn shell, but both Bourne and C shells remain. A few other items are gone, and some are simply obsolete. While a few isolated commands have problems, the Unix software is generally bug-free.

The BSD Fast File System is implemented as a layer on top of the Mac's hierarchical file system. This combination can affect performance heavily, and file names longer than 31 characters won't work. Since these limitations are in HFS and not in MachTen, mounted Network File System volumes from other Unix machines are not affected.

Tenon has taken advantage of the Mac to make some parts of life with Unix better. In addition to a nicely designed HyperCard stack of Unix's on-line manual pages, there is a multiwindowing terminal emulator, which is superior to A/UX's similar CommandShell application. MachTen has nothing like A/UX's Commandos, the hundreds of graphical interfaces for standard Unix commands. If you like Commandos, you'll miss them.

The Tenon manuals are superb. The BSD on-line documentation is, as in most implementations, a bit sparse, but Tenon provides several supplemental manuals for administration, installation, networking, text processing and basic use. The networking manual is particularly good, especially compared with the usual morass. No novice can learn that much about Unix from the manuals, but these are the best we've seen.

Tenon also has good support for bug fixes, which are available by mail or from Tenon via anonymous FTP (File Transfer Protocol).

MachTen as Macintosh. The current release of MachTen does not work with System 7.0. Tenon plans to release an upgrade that will support System 7.0, as well as Unix virtual memory and memory protection, in the first quarter of 1992.

MachTen makes for a credible, if slightly flawed, System 6 Mac. Most applications, including the Finder, run without difficulty. Many Start-up documents (INITs) work correctly, but there are still some significant ones, such as CE Software Inc.'s QuickMail, that don't. MachTen's release notes list known incompatibilities and limitations.

MachTen's design makes it inherently more compatible with certain types of Mac software than A/UX. In particular, third-party devices that require extra software have a good chance of working with MachTen, which they rarely do with A/UX.

MachTen performs Mac multitasking without System 6's MultiFinder. You can run multiple Mac applications at once, but the Finder doesn't realize what's happening, so the About the Finder window doesn't show how much memory other Mac programs are using. (The Unix program ps will do this, though.) Similarly, active applications don't show up in the Apple menu, and desk accessories don't operate in a separate memory layer. Running standard Mac applications, we found MachTen to be almost as stable as System 6 MultiFinder.

MachTen imposes a mild performance penalty on Mac applications, but for most people this degradation will be insignificant.

Synergy. MachTen's strength lies in the way it merges the Mac and Unix environments. All Mac volumes

See MachTen, Page 60

SCORE CARD
MachTen 1.0.1

Overall value	Very good
Performance	Very good
Features	Very good
Ease of use	Very good
Documentation/support	Very good
List price	$595*

Excellent · Very good · Good · Average · Below average

*$835 depending on non-storage I/O ports used.

ON BALANCE
MachTen 1.0.1
Tenon Intersystems

If you want to run Unix on a Mac, you should look at MachTen and Apple's A/UX. The latter requires a high-end Mac and a lot of disk space, and it takes over the CPU. The former runs on a Plus with 4 Mbytes of RAM, uses your Mac's hard disk and runs more Mac software. MachTen is ahead in networking capabilities and has the best Unix manuals we've read. MachTen lacks memory protection and virtual memory, but we still rate it as a good value.

EPlanner charts personnel-resource course

Gantt-chart app simple, lacks tools

By Mel Male

Foundation Solutions Inc. has released Version 2.0 of EPlanner, its Gantt-chart-oriented project planning and tracking application. Designed for easy point-and-click use, EPlanner creates schedule charts that include resource-load histograms, user-definable chart symbols, graphical and textual chart annotations and time-line settings from minutes to years. EPlanner 2.0's suggested retail price is $255. Upgrading from any previous version costs $65.

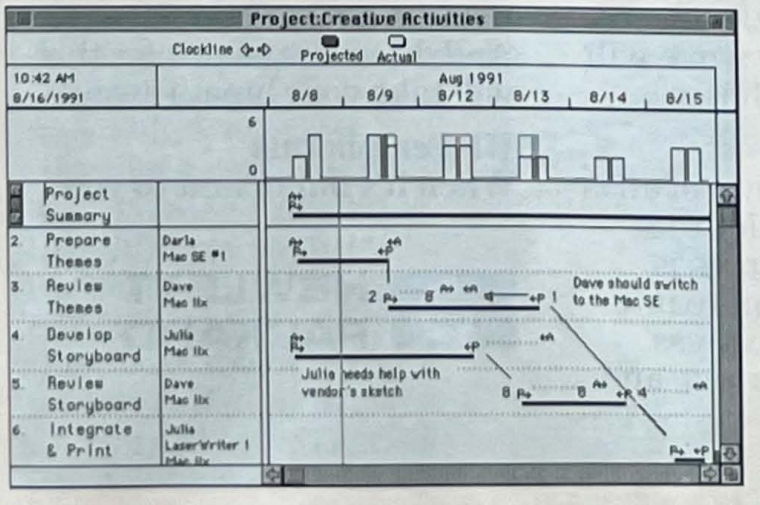
What's new. Tops in usefulness among EPlanner 2.0's new features are shared resource pools and resources; saved as separate Macintosh documents, the resource pools can be used by multiple projects. Resource-load histograms are displayed across a project's time line and reveal at a glance where resources are overcommitted; pop-up dialog boxes provide more-detailed information on the resources. The upgrade also offers improved import and export capabilities; cut, copy and paste for tasks and milestones (significant user-specified points within a project schedule); a printing-status box; on-line hypertext help; and a few new presentation-graphics features.

Easy to use. With EPlanner's click-and-drag interface, all tasks and milestones can be repositioned and lengthened or shortened chronologically. Dependencies are established by clicking on the completion point of a preceding task and dragging to the start of a dependent task. Double-clicking on a task's schedule bar will open a data-entry window with all pertinent scheduling information for the task. If you want, scheduling data can be typed directly into these fields.

Still lacks some basics. Despite its overall ease of use, there are some annoying deficiencies in EPlanner's user interface. Most notable is the lack of a Select All capability to make global text-format changes to the task descriptions and other chart text.

Furthermore, EPlanner still provides no capability for planning or tracking project expenditures, a feature that is important to many small-project managers and vital to controlling medium-size or large projects. Unlike programs such as Claris Corp.'s MacProject II, while resources can be shared, they cannot be split and used simultaneously for multiple tasks; employees cannot be assigned to spend half their time on one task and half on another, for example. Sophisticated schedulers will miss automatic

See EPlanner, Page 60



EPlanner's Gantt-chart project screen includes a resource-load histogram that shows where resources are overcommitted. Text and graphical annotations can be added at any location on the chart.

SCORE CARD
EPlanner 2.0

Overall value	Average
Performance	Average
Features	Below average
Ease of use	Very good
Documentation/support	Very good
List price	$255

Excellent · Very good · Good · Average · Below average

ON BALANCE
EPlanner 2.0
Foundation Solutions Inc.

EPlanner is a point-and-click project planning and tracking tool for project managers familiar with Gantt charts. Its ease of use makes it worth considering if you need help managing personnel for small or medium-size projects. However, its lack of financial planning and tracking, resource leveling, a hierarchical task structure, and presentation-quality graphics limit its usefulness. The EPlanner manual is well-written; its on-line help system is excellent.

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EPlanner

From Page 58

resource leveling and a hierarchical task structure.

Unfortunately for users looking to create presentations from their schedules, EPlanner's graphics tools don't provide the graphical flexibility of programs such as Varcon Systems Inc.'s Great Gantt!. Although font sizes can be changed in EPlanner, box sizes and borders can't be altered, and the program doesn't support color.

The export capability works smoothly, but the format of the exported files is unnecessarily complicated.

Performance. EPlanner's graphical interface is responsive and fast. Scrolling of Gantt charts moves smoothly from one task to another. Version 2.0 is 32-bit-clean, and it is compatible with Apple's System 7.0.

Although EPlanner can use TrueType fonts and 7.0's stationery feature, it is not fully System 7-savvy; features such as publish and subscribe, Apple events and balloon help are not supported.

The export capability works smoothly, but the format of the exported files is unnecessarily complex. Data field names are exported along with the data. This may be useful when editing files with a word processor, but it creates a sorting problem when you use the exported data in an application such as Claris' FileMaker Pro or Microsoft Excel.

To make matters worse, importing data into EPlanner can be difficult. The program first checks data for completeness and integrity, and if even one item does not pass this check, none of the data is imported.

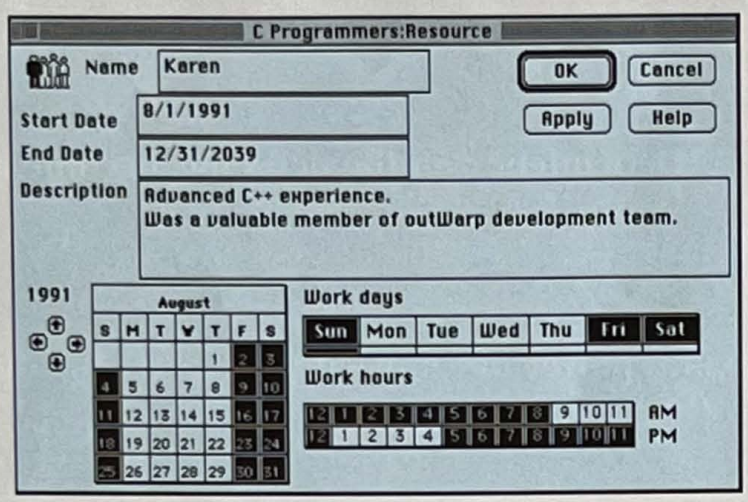
Documentation and support. EPlanner's 135-page, spiral-bound reference manual is well-written and contains a lot of detail, but there are some omissions; a table of error messages is not included, for example, and technical support is not discussed. The manual includes abundant views of the various menus and dialog boxes, however, as well as a separate appendix devoted to each of the main screens, which is especially useful to the experienced Macintosh user who wants a quick overview.

The new on-line help system, EHelp, is excellent. (Foundation Solutions also markets it to developers for $350 as a separate product; see MacWEEK, June 18.) EHelp uses a hypertext approach; clicking on underlined text immediately links the user to related information within the help window, while clicking on dotted underlined text pops up a smaller window that remains visible only while the mouse button is down. The help system makes effective use of full-size graphics of EPlanner menus, input screens, dialog boxes, buttons and check boxes. EHelp's dialog window and its scrolling text field are resizable (a great convenience, since the dialog boxes contain an abundance of information).

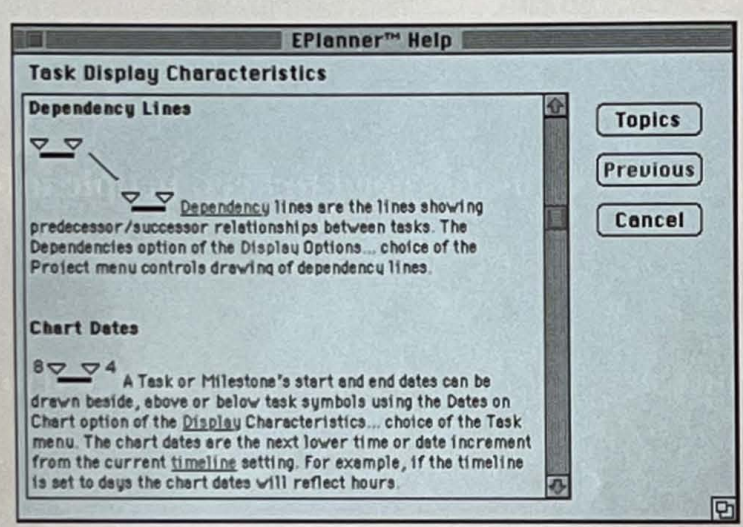
Conclusions. EPlanner 2.0's ease of use makes it a product that you should consider if you need help managing small to medium-size projects that depend primarily on personnel resources.

EPlanner remains meager, however, in overall features compared with other applications seeking the same market niche, such as Great Gantt! and AEC Software's Fast-Track Resource. Its lack of financial planning and tracking, resource leveling, a hierarchical task structure, and presentation-quality graphics limit its usefulness for larger businesses and projects.

Foundation Solutions Inc. is at 2000 Regency Parkway, Suite 270, Cary, N.C. 27511. Phone (919) 481-3517; fax (919) 481-3551. □



A project can draw on multiple resource pools simultaneously. Each resource in a resource pool has its own calendar and can be shared with other projects, thanks to the resource-pool server subsystem.



EPlanner's new on-line EHelp system uses a hypertext approach. Foundation Solutions markets the help-system engine to developers as a separate product for inclusion in their own products.

SYSTEM 7 COMPATIBILITY

EPlanner 2.0	
Balloon help	No
TrueType	Yes
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

*According to vendor.

MachTen

From Page 58

can be accessed by Unix software, because the Unix file system is a layer on top of the Mac file system. (This is the opposite of what Apple chose for A/UX.) One benefit of Tenon's arrangement is you can mount an AppleShare volume on the MachTen Mac and then share it companywide.

MachTen's most impressive accomplishment, however, is the integration of LocalTalk with TCP/IP by encapsulating IP in AppleTalk packets. In this, MachTen succeeds where A/UX fails even to make an attempt.

It took us less than 10 minutes to configure and hook together two Macs for TCP/IP communication over LocalTalk. After that we ran FTP, Telnet, rlogin, sendmail and other typical Unix networking software between the two. TCP/IP usage does not affect normal AppleTalk activities, such as using laser printers and AppleShare-compatible servers. Performance over LocalTalk is reasonable. We performed FTP transfers at about 14 Kbytes per second, and copying files off NFS volumes moved data at about 10 Kbytes per second.

MachTen also is a network router, so any Mac running Apple's MacTCP on a LocalTalk network that is connected to the MachTen Mac can access not only MachTen, but any connected Ethernet network as well. It is likely that MachTen will replace some Cayman Systems Inc. GatorBoxes and Shiva Corp. FastPaths as a side effect of its TCP/IP-over-LocalTalk capabilities.

There are a few areas that need more work. Like A/UX, you can print to a LocalTalk printer from either Mac or Unix software, but you cannot use the Unix spooler to spool Mac print jobs. MachTen also does not automatically convert text files between Unix and Mac formats the way A/UX does, although Tenon does provide Unix commands to do the job. MachTen also includes a program to convert between the AppleSingle and AppleDouble formats, although you won't need this unless you're networking and sharing Mac files with other Unix computers.

Conclusions. MachTen, though still a young product with some rough edges, is powerful and useful right now. In particular, universities with installed bases of non-PMMU Macs on LocalTalk with only average storage capacity should seriously consider MachTen — it's a natural and almost-perfect fit.

But MachTen shouldn't be limited to universities; it's far too good for that. Its TCP/IP-AppleTalk integration is excellent, and it's more compatible with INITs and other low-level Mac software than A/UX. It's true BSD, and it provides a close integration of Mac and Unix environments on one Mac.

The ways in which MachTen differs from A/UX should make it easy to decide which is more appropriate for any situation. Tenon has already shown that it can deliver upgrades in a timely fashion, so MachTen will keep getting better.

Tenon Intersystems is at 1123 Chapala St., Santa Barbara, Calif. 93101. Phone (805) 963-6983; fax (805) 962-8202. □

SYSTEM 7 COMPATIBILITY*

MachTen 1.0.1	
Balloon help	No
TrueType	Yes
Publish and subscribe	No
Apple events	No
32-bit addressing	No

*MachTen does not currently run under System 7.0.

IN BRIEF

EPS Exchange

Saves FreeHand files in Illustrator format

Altsys Corp.'s EPS Exchange is a $149 utility that lets users of Aldus Corp.'s FreeHand 3.0 save or export their artwork in Adobe Systems Inc.'s Illustrator 3.0 or Illustrator 88 formats. According to Altsys, EPS Exchange is the first of a series of Altsys XTRAS software packages for the graphics industry.

The name, EPS Exchange, is slightly misleading, because the conversion is strictly one way, from FreeHand to Illustrator. Converting a PostScript illustration from FreeHand to Illustrator may seem trivial, but FreeHand and Illustrator approach many drawing elements quite differently, so the translation from one to the other is more difficult than you might think. For example, FreeHand uses linear and radial fills to produce color gradients inside a shape. Illustrator accomplishes the same effect using blends inside a mask. Likewise, FreeHand uses text blocks, which Illustrator treats as text objects inside a rectangular path.

Installing and using EPS Exchange is straightforward. You simply drag EPS Exchange into the Aldus folder inside your System folder. Then, when you use FreeHand 3.0, two extra options, Illustrator 3.0 and Illustrator 88, appear on the format pop-up menu in the Save As and Export dialogs. We noted that you get the same result using either Save As or Export when you create an Illustrator file — neither option overwrites the original FreeHand file, and both techniques result in an identical Illustrator file.

Conversion to Illustrator 88 format is generally more limited than that to Illustrator 3.0, because the older software lacks support for many features such as multistyle text blocks. The limitations of the conversions are well-explained in the short manual that accompanies the product. In general, the conversions work well within the limitations of the common feature sets, but some features — particularly radial and linear fills — translate into Illustrator files that are much larger than the native FreeHand ones.

If you need to convert FreeHand files to Illustrator on a regular basis, EPS Exchange is by far the easiest way to do so, but at $149, it's a little steep for casual use.

Altsys Corp. is at 269 W. Renner Road, Richardson, Texas 75080. Phone (214) 680-2060; fax (214) 680-0537. — *By Bruce Fraser*

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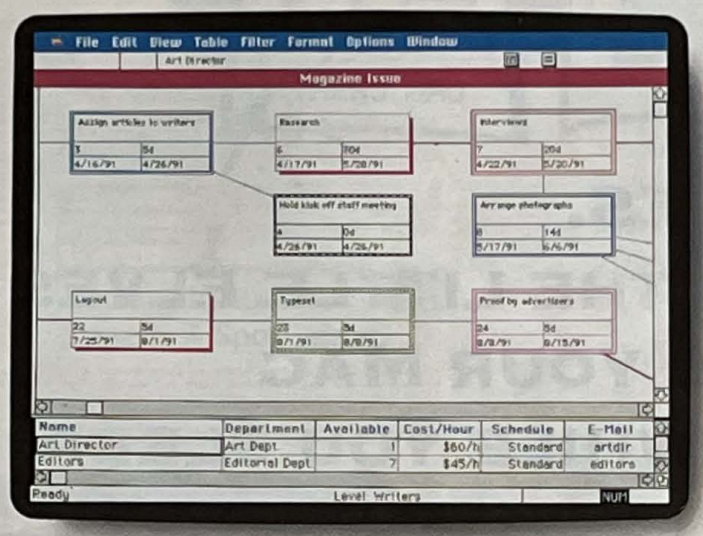

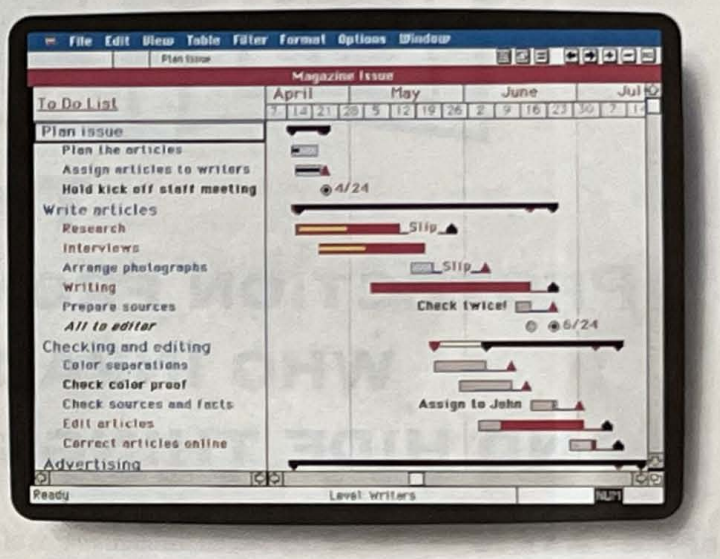

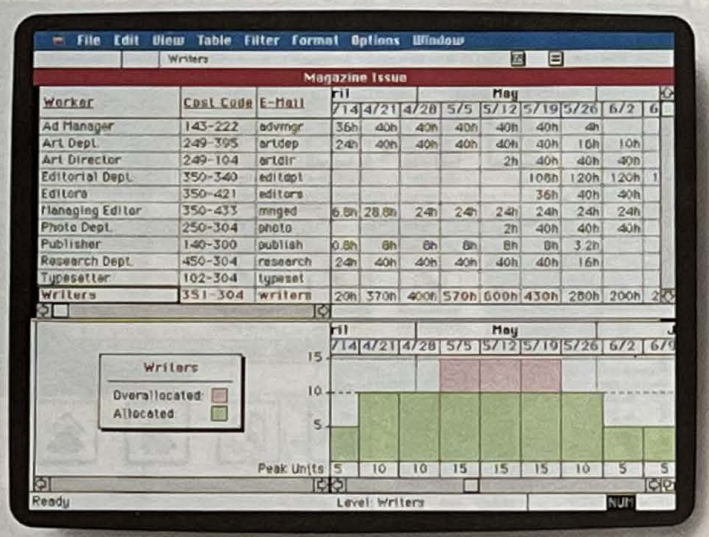

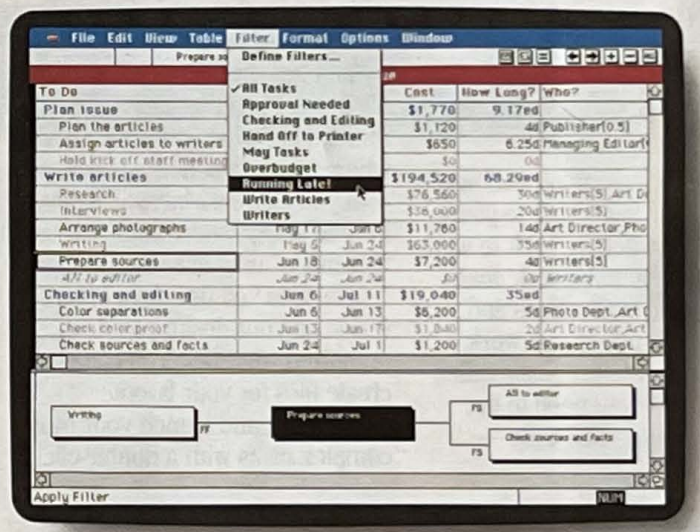

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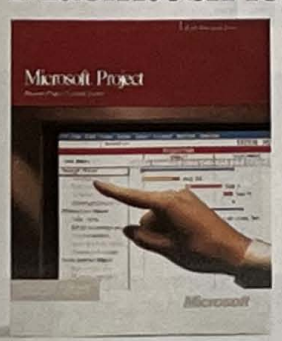

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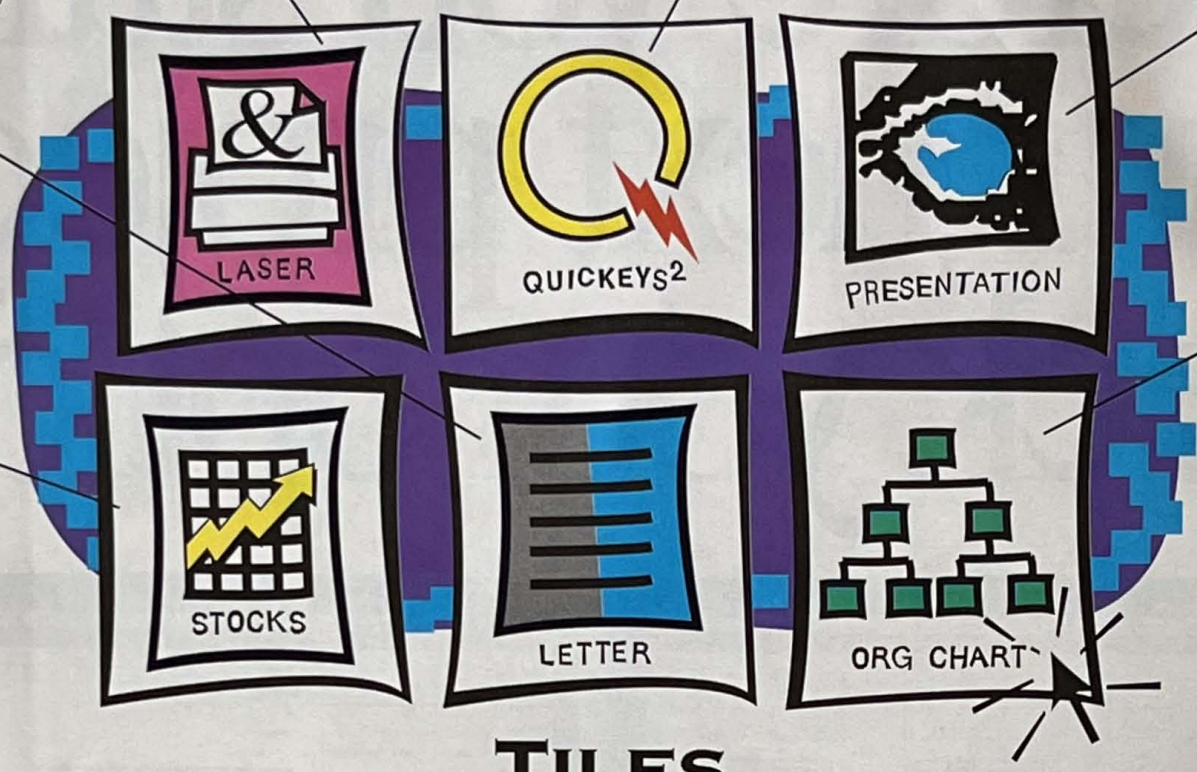

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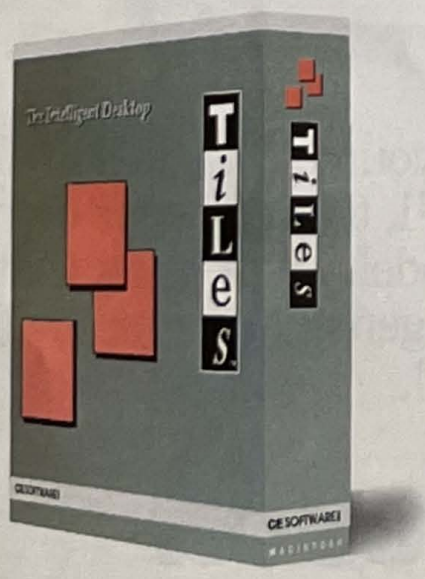

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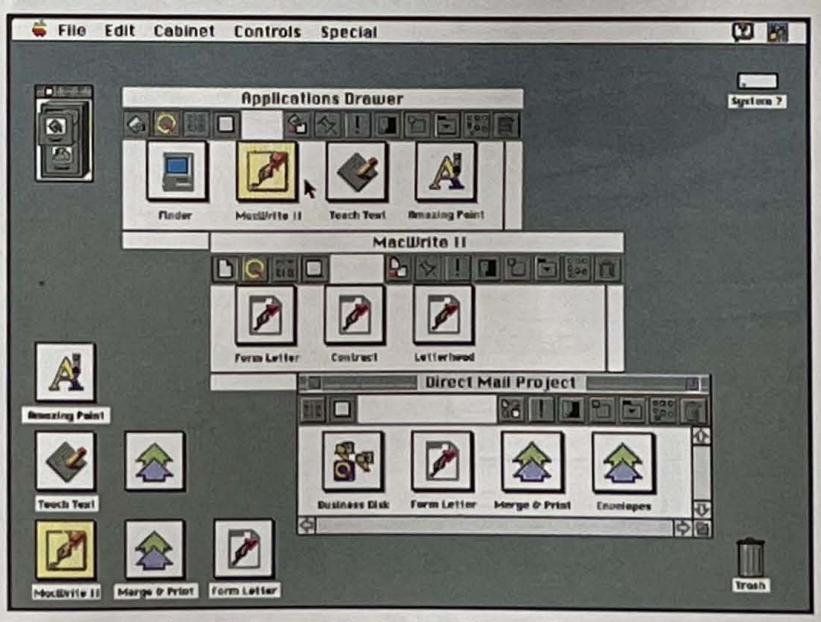

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SEYBOLD
Report on Desktop Publishing

Volume 6, Number 1
ISSN: 0889-9762
September 2, 1991

36 **Apple, Adobe plan new deal.** Apple and Adobe have announced an intent to sign a new deal under which Apple will integrate Adobe Type Manager into future releases of the Macintosh operating system. Under the plan, Apple will support both Adobe and TrueType fonts.

37 **Gray-scale printer from Acer.** Acer has developed a low-resolution laser printer with enhanced capabilities for producing gray-scale images.

38 **Database software from Frame.** Frame Technology is planning to offer software for automating database publishing. The software was developed by Actin for documentation for its 4th Dimension product. Frame also announced plans to support a Macintosh program for viewing documents created on any workstation running FrameMaker.

40 **Color DeskWriter from HP.** Hewlett-Packard has launched an effort to get into the Macintosh market with a color DeskWriter, a color scanner and Macintosh PostScript versions of its LaserJet printers.

2 **Five years ago.** As we begin the sixth year of this publication, we look back at some developments we covered five years ago.

42 Express Publisher for Windows
42 Agfa enhances Focus Color scanner
43 Kentek offers 30-ppm printer
44 Radius Pivot for the PC

43 **Briefly:** Inset, Aldus, DTC, LaserMaster, Apple, EFI, Zoran/Fuji, Kodak/Computer Support

Desktop Color: Ventura Enters Battle 3

THIS IS REALLY two stories in one. First, it's about producing quality color on the desktop—not "good enough" or office-quality color, but separations that can be sold at a profit. Second, it's about a major improvement in Ventura Publisher: the ability to use extensions written by third-party developers. The connection between the two stories is that the first announced extensions will enable Ventura to perform color separation and retouching, using software acquired through an exclusive agreement with Pre-Press Technologies.

Editing Aids: A Product Update 14

GRAMMAR AND STYLE checkers have improved greatly since we surveyed the field two years ago. They still have a long way to go before they can displace human copy editors, but the best of the programs (when used with common sense and skepticism) can help a writer produce readable prose for everyday communication. In this article, we take a look at:

Correct Grammar (DOS, Windows)	16	PowerEdit (DOS)	20
Editor (DOS)	17	RightWriter (DOS, Mac, Unix)	22
Grammatik (DOS, Windows, Mac)	18	Sensible Grammar (Mac, Apple II)	24

We also report on a corporate style homogenizer called Corporate Voice (p. 19) and a few online reference aids (p. 23).

Macworld Expo: System 7 Spotlighted 26

TO NO ONE'S SURPRISE, compatibility with System 7 was tops on everyone's mind at Macworld Expo. Perhaps for that reason, there weren't any blockbuster announcements this time. Nevertheless, our team of intrepid reporters found a number of interesting and useful products, upgrades and novelties.

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Every issue of The *Report* covers cutting-edge desktop publishing technologies...

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Report on Desktop Publishing

Desktop Color: Ventura Enters Battle 3

Editing Aids: A Product Update 14

Macworld Expo: System 7 Spotlighted 26

Seybold, through its newsletters, conferences and consulting is recognized worldwide as the leading information source for anyone involved in desktop publishing, composition or the electronic prepress industries.

Here's a listing of topics covered in recent issues of the *Seybold Report on Desktop Publishing*:

Page makeup comparison... How the market leaders stack up in composition quality, long-document processing, tabular formatting and other demanding tasks.The *Report* provides continuing study of the leading desktop page makeup programs.

600-dpi laser printers... Most of the trade press reviews 300-dpi laser printers. But we ran tests and comparisons on the next range of medium-resolution laser printers to see if their quality justifies their price tag.

Desktop color separation... Can software packages like Photoshop, ColorStudio, and PhotoMac give you professional quality color separations?

Adobe's Multiple Master fonts... We explained how specially designed PostScript fonts can generate hundreds of intermediate weights from a small amount of data.

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Scheduling software for project tracking

These applications no longer are just bell reminders for appointments; they also can help manage projects and keep them on track.

By Larry Stevens

Instead of opting for a traditional PERT planner, such as Claris Corp.'s MacProject, a growing number of users are taking advantage of the project-tracking capabilities of scheduling software.

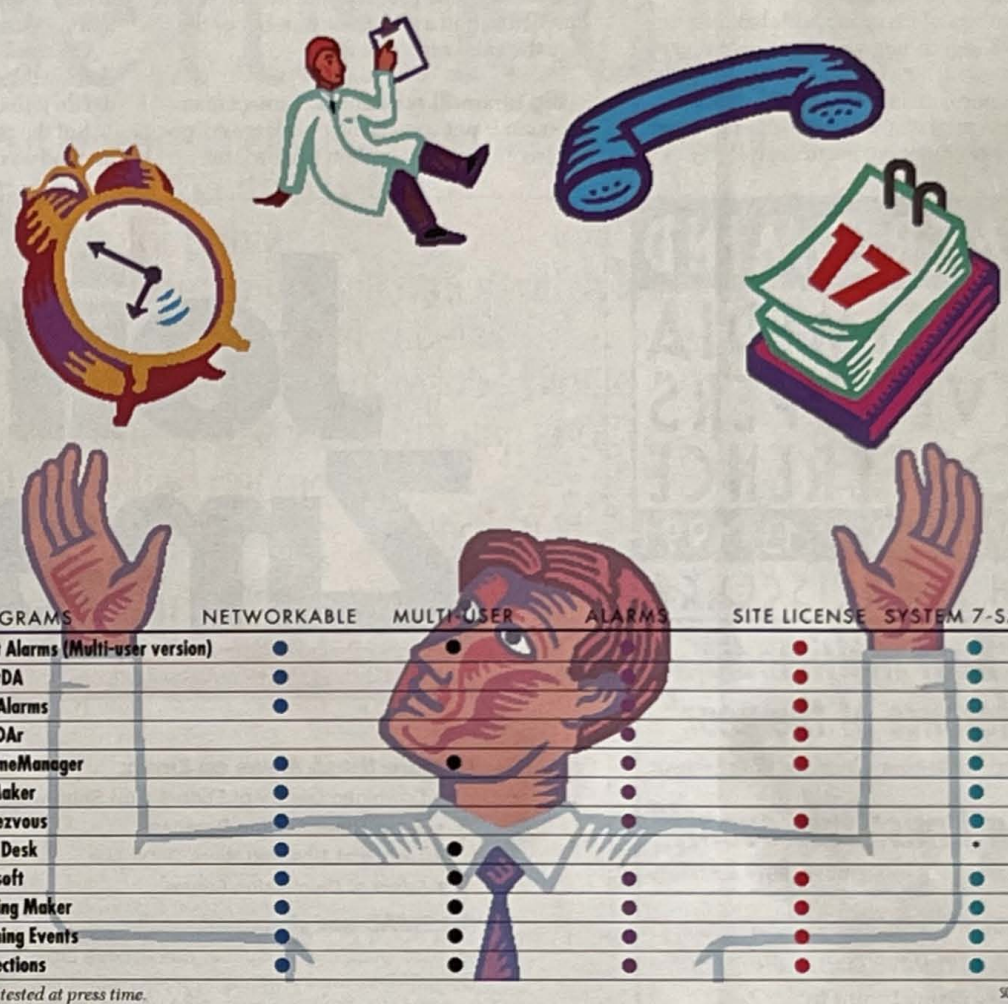
As a result, scheduling programs now are being used in ways that far exceed the simple reminder function that used to prevail.

One research and development workgroup at GTE Laboratories Inc. in Waltham, Mass., always seemed to be digging itself out of an overwhelming mountain of tasks. "We were all working very hard, but we were always behind," said Jesse Hefter, supervisor of the group. "The worst part was that we had no idea what we actually accomplished, or how we spent our time."

But ever since the company began using AgentDA, scheduling software from TeamBuilding Technologies Inc., Hefter said his group has experienced a two-thirds drop in backlogged tasks, a 60 percent increase in the time engineers actually spend on research rather than administrative or other non-engineering work, and, said Hefter, "We're all more relaxed. We even have more free time."

While Hefter attributes these dramatic results to AgentDA, they didn't come from simply being better able to keep track of appointments, the original raison d'être of scheduling software. Instead, he said, the real advantage of the software is that it allows the team to do in-depth project management, as well as retrospective analysis.

For example, if Hefter sees that an engineer is constantly interrupted to repair machines and never finishes assigned duties, Hefter will either shift the maintenance responsibility to another person or allocate time in the engineer's schedule for repair work. "We're on top of our time. Now when we plan something, we're relatively certain it'll get done," Hefter said.



PROGRAMS	NETWORKABLE	MULTI-USER	ALARMS	SITE LICENSE	SYSTEM 7-SAVVY
Smart Alarms (Multi-user version)	●	●		●	●
AgentDA	●			●	●
Easy Alarms	●			●	●
calenDAr			●	●	●
MyTimeManager	●	●	●	●	●
DayMaker	●		●		●
Rendezvous	●		●	●	●
Front Desk	●	●			*
Planisoft	●	●	●	●	●
Meeting Maker	●	●	●	●	●
Alarming Events	●	●	●	●	●
Connections	●	●	●	●	●

* *Not tested at press time.*

SCOTT BALDWIN

What's available. Early scheduling software packages, such as Smart Alarms from JAM Software USA, were created primarily to remind users of upcoming events. While Smart Alarms now comes bundled with Appointment Diary to provide both alarms and sophisticated scheduling, a few packages still specialize in signaling appointments.

For example, Easy Alarms from Essential Software and Psybron Systems Inc.'s calenDAr each have alarm-clock functions that provide a very easy and cost-effective means of helping you get wherever you have to be at the time you're supposed to be there. Alarming Events from CE Software Inc., while made primarily for reminders, also has a large number of calendar views.

However, most scheduling software combines alarm extensions along with scheduling and project-tracking features. MyTimeManager from MacShack Enterprises provides daily, weekly and monthly pages that are linked.

DayMaker, which has been announced from Pastel Development Corp. but has not shipped yet, will provide a number of views, including a Gantt chart for a graphical representation of a four-day event. PMC Telesystems Inc.'s Rendezvous provides linked daily, weekly and monthly diaries along with spreadsheetlike annual planners.

Planisoft from ASD Software Inc. is the only schedule program that runs interactively across Mac and Windows platforms. Front Desk from Peachtree Software Inc. offers weekly and daily views, specific appointment searching, service-rendered tracking, appointment analysis, and confirmation reports.

ON Technology Inc.'s Meeting Maker allows you to broadcast any open time slots on your schedule to others in a network. Concentrix Technology Inc.'s Connections is a set of HyperCard stacks that allows individual and group scheduling.

Controlled alarms. Besides being easier to use than project-management software, scheduling packages can help users keep on top of activities that have to occur at a given time.

John Czaban, vice president of research and development at Delta F Corp. of Woburn, Mass., uses MyTimeManager to help plan his work schedule along with other members of the corporation. But for Czaban, the alarm function is MyTimeManager's most important feature.

"I'm always working in a crisis mode," he said. "Unless a message flashes on my screen telling me about an appointment, I'll probably forget about it." Czaban also uses MyTimeManager to coordinate work and personal responsibilities since "the line between my work and home lives is very narrow."

Retrospective viewing. Often, users need scheduling software to look at what has been rather than what is to come.

Members of the advanced technology department at Sara Lee Corp. of Chicago each typically juggle four or five projects at a time. Keeping track of all the activities related to each project was no piece of cake, said Paul Bandrowski, senior advanced technology analyst at the company.

"When one of our people was involved in purchasing new equipment, he might have 10 meetings, 15 phone calls, 20 memos, eight letters and receive three proposals

See Scheduling, next page

PriceWatch
SCHEDULING SOFTWARE

Item	List price	Street price	Source
ASD SOFTWARE INC. Planisoft	$349	$258	Software Spectrum Dallas
CE SOFTWARE INC. Alarming Events	$129.95	$95	Software Center San Francisco
JAM SOFTWARE Smart Alarms and Appointment Diary	$125	$89	USA ComputerWare Berkeley, Calif.
ON TECHNOLOGY INC. Meeting Maker	$495	$399.99	Egghead Software Minneapolis

Scheduling

From previous page

related to that purchase," Bandrowski said. He can write them all down, but cross-referencing each activity to the project was becoming a project in itself."

Members of his group had elaborate paper-based coding systems to help find past activities and notes relating to projects. But since some activities were related to more than one project, the system often fell apart. And when things got hectic, employees sometimes ignored the cross-reference coding altogether.

Now using DayMaker, members of Bandrowski's group have been able to eliminate all cross-referencing. They just type their activities into the program and use the search function to find a telephone number or the date they met with a vendor.

Big or small schedules. Project management is not something only large corporations engage in. Stephen Gagne is an instructor and in charge of the computer lab at Peninsula School in Menlo Park, Calif. He uses Rendezvous to schedule lab classes and lesson plans. Each week he opens five daily pages on his screen and arranges his lessons and lab assignments among those pages.

Obviously, this is something he could have done with pencil and paper, and in the past he did do it that way.

But the problem with the paper-based method was that "there would be so many erasures, sometimes the page would rip through."

Scheduling software has in many cases not only taken the place of a calendar, it has become the cornerstone of users' work lives. "I'm completely dependent on it," says Czaban. But he, like most users, doesn't mind his addiction. "Once I've typed an activity into the program, I don't have to think about it anymore. The program will help me make sure I do what has to be done and keep a record of what I accomplished." □

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For assistance in membership, billing or passwords call CompuServe Customer Support at (800) 848-8990.

Product Info

ASD SOFTWARE INC.
Planisoft: $349 for one user; $895 for five users; $1,295 for 10 users
4650 Arrow Highway, Suite E-6, Montclair, Calif. 91763
Phone (714) 624-2594; fax (714) 624-9574

CE SOFTWARE INC.
Alarming Events: $129.95
1854 Fuller Road, West Des Moines, Iowa 50265
Phone (515) 224-1995; fax (515) 224-4534

CONCENTRIX TECHNOLOGY INC.
Connections: $199
1875 S. Grant St., Suite 760, San Mateo, Calif. 94402
Phone (415) 358-8600; fax (415) 358-9742

ESSENTIAL SOFTWARE
Easy Alarms: $59.95
28 Mulford Ave., Staatsburg, N.Y. 12580
Phone (914) 889-8365; fax (914) 889-8365

JAM SOFTWARE USA
Smart Alarms and Appointment Diary: $125; **Smart Alarms and Multi-User Appointment Diary:** $249 for up to four users; $374 for up to eight users; $499 for up to 15 users; $749 for up to 25 users
P.O. Box 4036, Mariden, Conn. 06450
Phone (203) 630-0055; fax (203) 639-0216

MACSHACK ENTERPRISES
MyTimeManager 3.5: $79.95
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Phone (617) 876-6343; fax (617) 876-6343

ON TECHNOLOGY INC.
Meeting Maker: $495 for five users; $895 for 10 users
155 Second St., Cambridge, Mass. 02141
Phone (617) 876-0900; fax (617) 876-0391

PASTEL DEVELOPMENT CORP.
DayMaker: $99.95
81 Franklin St., Suite 3B, New York, N.Y. 10013
Phone (212) 431-3421; fax (212) 431-3079

PEACHTREE SOFTWARE INC.
Front Desk: $99; $225 for three users; $500 for 10 users
1505 Pavilion Place, Norcross, Ga. 30093
Phone (404) 564-5800; fax (404) 564-5888

PMC TELESYSTEMS INC.
Rendezvous: $249
Box 5127, Vancouver, British Columbia V6B 4A9, Canada
Phone (604) 255-9949; fax (604) 266-4257

PSYBRON SYSTEMS INC.
calenDAr: $49.95
1116 Smith St., Charleston, W.V. 25322
Phone (304) 340-4260 or (800) 866-4260; fax (304) 345-3312

TEAMBUILDING TECHNOLOGIES INC.
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GORDON STUDER

MacInTouch RIC FORD

Targeting users of all types in Mac interface

Setting up consistent interface targets that can be hit easily by any Mac user is a difficult design problem and an exercise in compromise.

ISSUES & TRENDS

Setting targets. Imagine the challenge set before the Finder 7.0 design team: to improve the world's most successful user interface while working within all sorts of technical and historical constraints.

The designers had to build a conceptual target that could be hit easily by any mouse operator in the incredibly diverse set of Mac users, and they had to be consistent with the rules people have learned while working with previous versions of the Finder during as many as seven years.

I received a note from one of Apple's interface designers, John Sullivan, in response to recent columns about one small detail of the Finder 7.0 design: icon renaming (see MacWEEK, Aug. 13 and Sept. 17). Sullivan, who describes himself as "human interface guy for Finder 7.0," discussed at length the operation of the new Finder and the rationale behind its design.

Midcourse corrections. As a company whose success has much to do with interface design, Apple has long conducted "user studies" of its current and future products. Sometimes the studies are carried out as rigorous lab experiments on carefully selected groups of subjects, and, at other times, the testing is done more quickly and with less formality.

These studies, along with customer feedback and other research, turned up several problems in ease of use with Finders prior to Finder 7.0.

One problem was renaming icons. Apple's studies found that confused users were developing "superstitious" techniques for renaming files and folders. Instead of simply clicking and typing a new name, for instance, some people would select an icon, then select its text, then delete the text and only then type a new name.

The team attacked the problem primarily by providing more visual feedback. In Finder 7.0, a text-renaming box appears whenever an icon name can be edited. In older Finders, you had to move the cursor over the name to see if it was changeable. According to Sullivan, user studies showed that the new approach was effective in eliminating much of the confusion.

A second problem with older Finders involved opening icons by double-clicking. Studies showed that people wanted to double-click on icon names as well as on icons themselves to open files and folders. This is especially important when an icon is obscured by an overlapping window but its name is still visible. It is also important when icons are small, as in list views (which operate more like icon views in Finder 7.0).

The designers decided that opening icons was more critical than renaming them, so double clicks always open an icon in Finder 7.0, whether the clicks are on the name or on the icon. To rename an icon, you now must target its text with a single click, or switch modes from the keyboard. (Part of this change is a side effect of Finder 7.0's ability to select icons by typing their names; it has to determine whether you are typing to select or to rename.)

Tips. The trade-offs for being able to double-click a name in Finder 7.0 are minor, but they may be disconcerting to veteran Mac users. Fortunately, there are simple procedural tricks that speed the process.

It turns out that no delay is necessary before typing a new name after clicking on an existing name in the new Finder. The renaming box will appear as soon as you start typing.

Selecting a portion of an icon's name for editing is a little trickier. To avoid the double-click delay, you can wiggle the mouse slightly after clicking on the name, then select the text you want to change.

Steve Kiene's patch to the Finder (see MacWEEK, Sept. 17) basically reverses the Apple design. The patch makes it impossible to open an icon by double-clicking its name but facilitates slightly the editing of names. It is probably best to avoid the patch, since it complicates Finder upgrades, and it runs against the grain of Apple's whole Mac philosophy.

Range. It is reassuring to hear from Apple people who are working hard on interface design and doing extensive user testing, but improvements to the Finder are only a short-range solution.

The confusion and trade-offs of small issues, such as icon renaming, are a reminder of the distance that we still have to travel in building user-friendly systems. Hitting the interface bull's eye for the 1990s will require new interfaces and new paradigms designed from scratch. □

Comments on MacInTouch are welcome at 7 Parmenter Ave., Maynard, Mass. 01754. Phone (508) 897-2621. Address electronic mail to 72511.44@compuserve.com from the Internet; to 72511.44 from CompuServe; to MACWEEKBOS from America Online, Delphi and GEnie; to RICFORD from MCI Mail or Connect. From AppleLink, 72511.44@compuserve.com@INTERNET# is the current address.

Join us on-line in the MacWEEK Forum by typing GO ZMC:MACWEEK on CompuServe or Zmac.

Ask David Ramsey

Disk icons rebound on 7.0 desktop

Q: *Is there any way to have my hard disk volumes displayed some place other than the right-hand side of the monitor that has the menu bar on it?*

A: Sadly, although System 7.0's Trash will dutifully remember its position if moved, disk icons show up in the same old place after a restart, even if you've previously placed them elsewhere. You could use a macro program to select and move the drive icons where you want, but there's nothing built into the Finder that will do this for you.

Q: *Does Rolex make any electronic wristwatches?*

A: Yes. Although the vast majority of Rolex watches sold are mechanical, the Oysterquartz analog quartz watch has been available for more than 10 years. Many Rolex dealers have never seen one, and it's not a popular model. It can be distinguished from fake Rolexes (which always use cheap quartz movements) by the word "Oysterquartz" on the dial.

Q: *I'm confused about FPU options for the LC and IIsi. What programs benefit from the FPU? Is one manufacturer's FPU better than another's?*

A: The FPU (floating-point unit), also known as the math chip or math co-processor, speeds up most arithmetic computations on the Macintosh. Some operations, such as transcendental functions, are hundreds of times faster, but few programs spend a significant portion of their time performing the type of calculations an FPU accelerates. Examples of users who'd likely notice the difference are a power spreadsheet user or someone using 3-D rendering or drafting packages.

For most Macintosh tasks, such as word processing, telecommunications, simpler spreadsheet work and painting or drawing, the performance improvement imparted by an FPU won't be obvious. Although there are many companies making FPUs in the PC-compatible world, in the Macintosh world there's only Motorola Inc., with its 68881 and 68882 chips. Everyone uses these (the 68882 is somewhat faster), so different vendors' units will perform similarly.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

The Help Desk

Old floppies for new; Microsoft's TrueType extension

Sometimes, old tips are as good as new ones. Here are two you might have missed since May.

- System 7.0 initializes floppy disks differently than earlier versions; it's smarter. When System 7.0 prepares a floppy for use, it maps out bad blocks automatically. This should mean a lot fewer "Initialization failed" errors.
- Microsoft Corp.'s Word 4 has problems printing TrueType fonts on the LaserWriter LS and StyleWriter printers. Luckily, those Redmond, Wash., whizzes created an extension to work around it. The ~MS Word TrueType™ Printer Init is included on the program disk with Word 4.00D, the latest version. You can download the extension from on-line services or call (800) 426-9400 to have Microsoft send it to you. International users should call (206) 936-8661.

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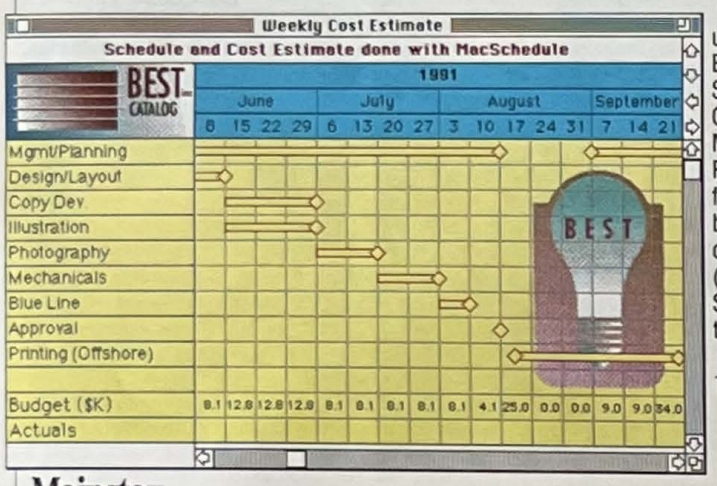

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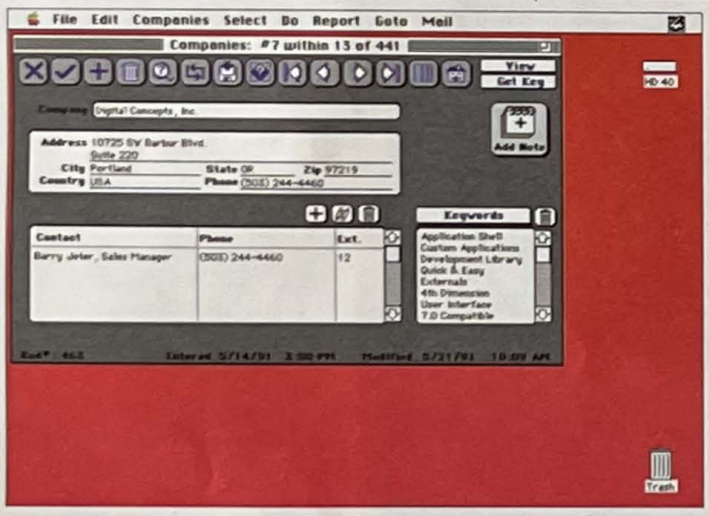

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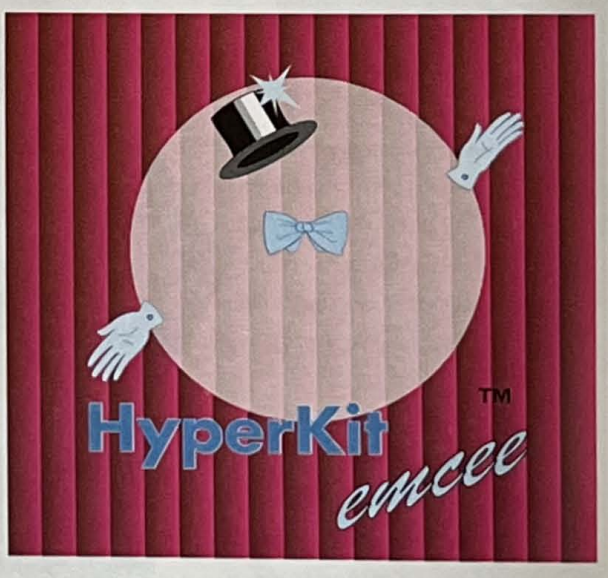

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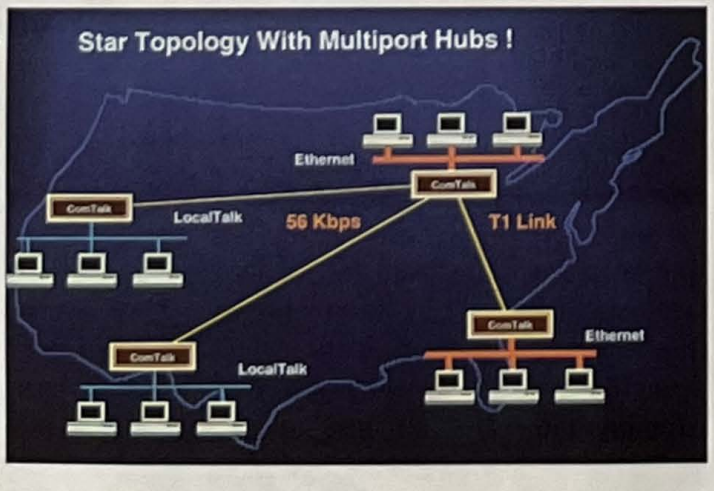

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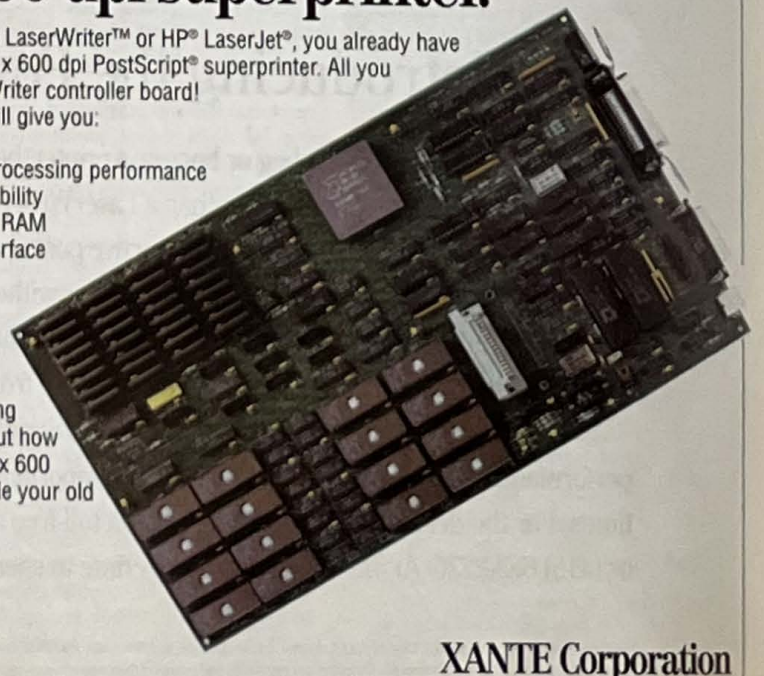

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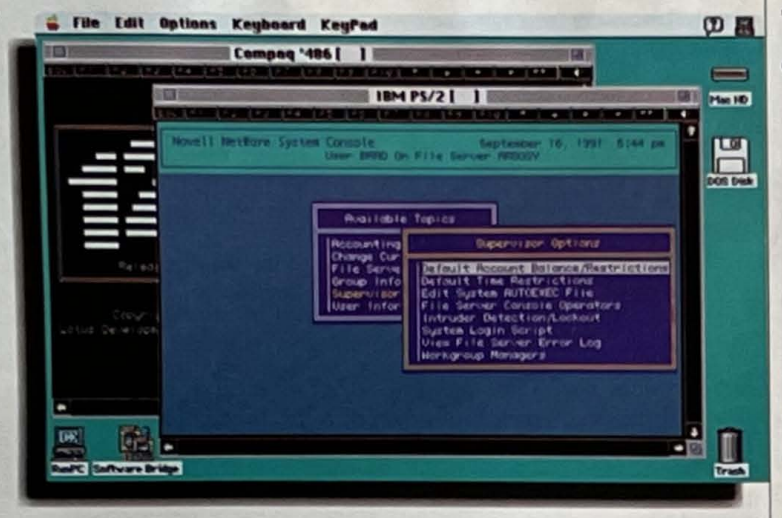

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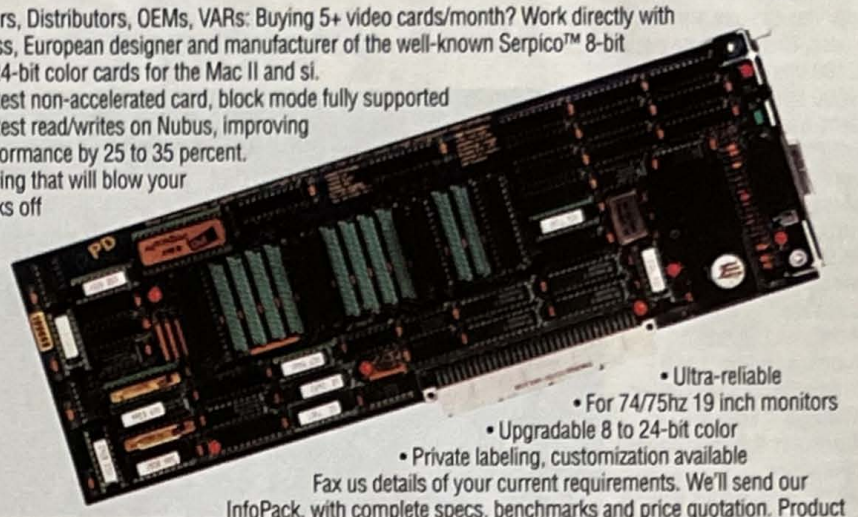

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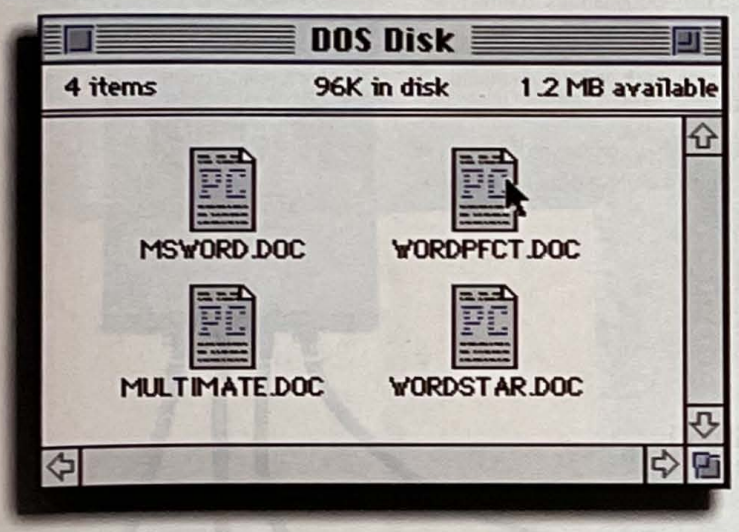

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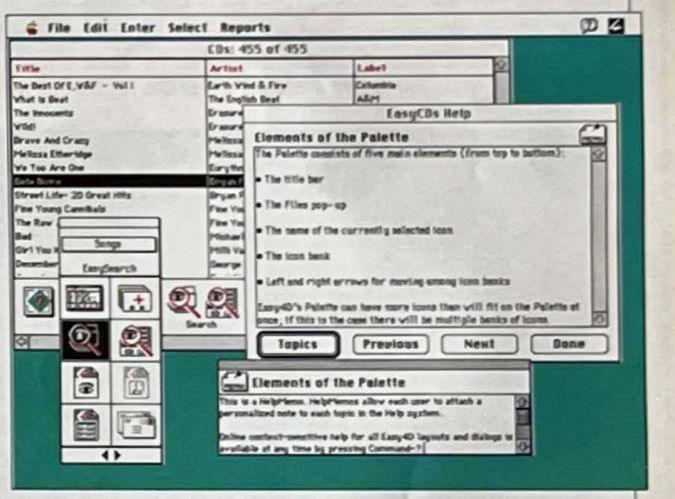

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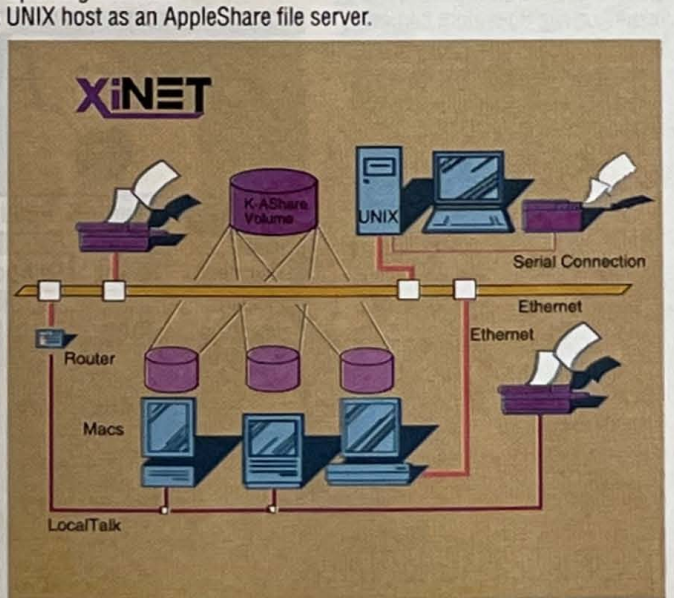

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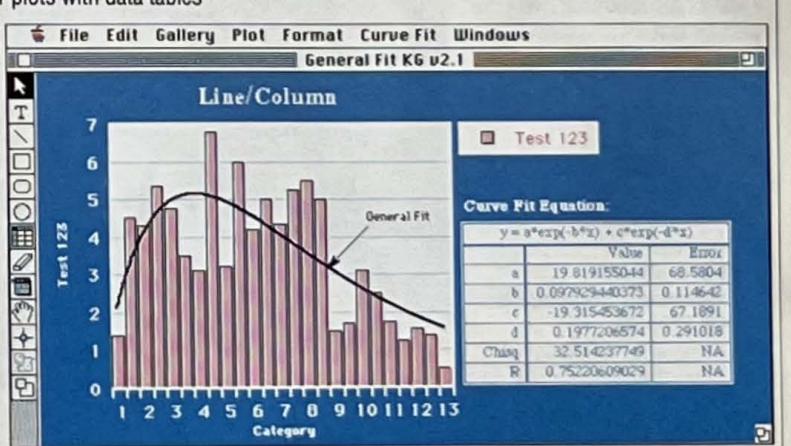

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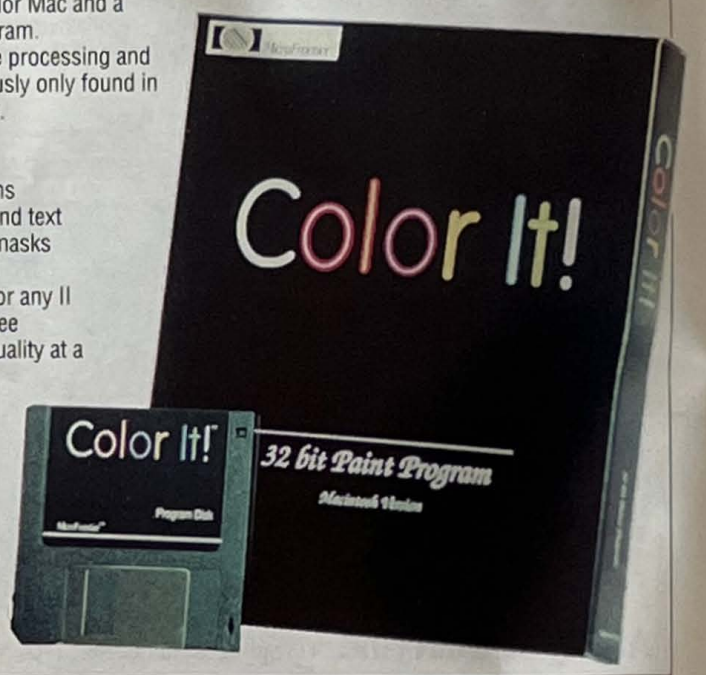

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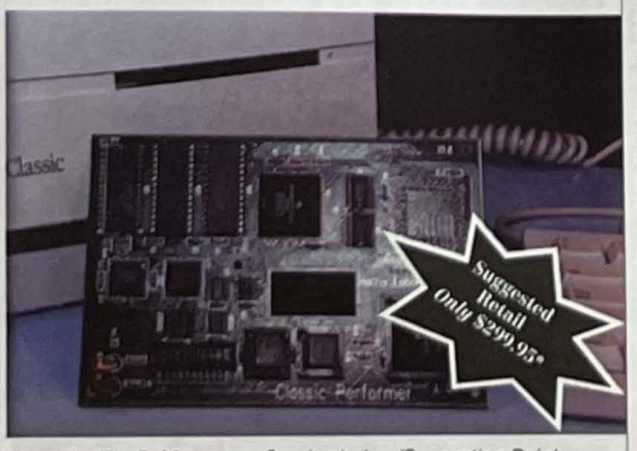

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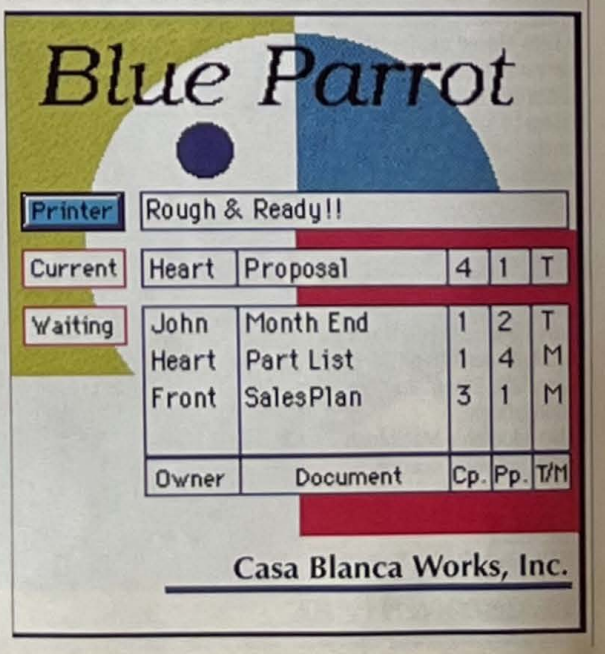

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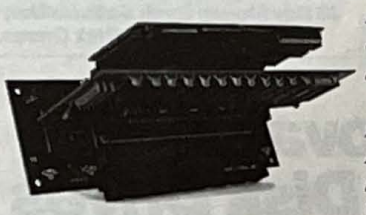


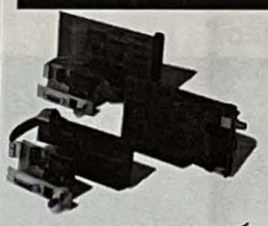
Asanté Ethernet card & IIsi Cache with 030 Dual Slot Adaptor.

Now with Logica Research's unique new IIsi enhancements, all your options are open. LogiCache plugs right in your IIsi slot. If you need another expansion card (video, Ethernet, etc.) just purchase the Logica '030 Slot Adaptor—which allows the use of the LogiCache AND the second expansion card! Ask us about our Apple NuBus adaptor trade-in program.

LogiCache IIsi 64K	$169
IIsi 030 Dual Slot Adaptor	59
20 MHz 68882 FPU	75

"If only there was an Ethernet card that could support thick, thin and 10Base T."

Asanté Ethernet from $209



ASANTÉ

Rated number 1 by MacUser. *Includes 5 year warranty.*

Networking Products

II, IIx, IIfx, IIcx, IIci, IIsi/SE30, LC, SE:

Thick/ Thin	$209
Thick/ 10T	209
Thick/Thin/ 10T	269
Apple AUI/ Thin*	269
Apple AUI/ 10T*	269
10T 12 port hub	699
Thick to 10T Adaptor	109
SCSI Ethernet Thick/ Thin/ 10T	349
Dayna EtherPrint / Plus	349/ 619

**Not for Mac SE*

"If only we knew which companies manufacture SIMMs so we can get the best prices and the fastest delivery."

Third Wave manufactures a full line of 1, 2, 4, 8 and 16 mb SIMMs without releasing harmful CFC's into the atmosphere. Call for manufacturer's direct prices.

LC VRAM	$69
SIMMpack for Classic 0 mb board	39
SIMMpack w/1 mb	49
SIMMpack w/3 mb	129
SIMMpack drive bracket kit*	16

**Remove drive from IIsi and LC, install in Classic.*

"If only we could find great sound in small speakers." MacSpeaker

MacSpeaker (Pair)	$229
Micro Sub™ sub woofer system	199
Carrying case	29

"If only I could get video images on a Mac." Look into XAPSHOT.

Import high quality still video images to your Mac using a frame grabber. XAPshot stores up to 50 images on 2" diskettes. Connect to a TV for previewing. Great for video, slide graphics and print work. Demo Diskette shipped overnight for $15.

XAPSHOT, camera only	$429
XAPSHOT Bundle w/24-bit frame grabber	$749
2" video diskette	$10

Media

Teac CT600H (60 mb)	$17
Teac CT600N (150 mb)	24
SyQuest SQ400 (45 mb)	69
SyQuest 800 (88 mb)	119
4mm DAT Tape, 60 meter	19
Optical Cart (ISO) 512/1024	125

Disk Drives

	Internal	External
52L*	259	349
105L*	379	489
210	659	749
320	1,099	1,199
425 3.5"	1,499	1,589
650	1,399	1,499
1000	1,999	2,099

52L, 105L, 210 & 425—2 yr. warranty. 320, 650 & 1000 mb—5 yr. warranty.

Macworld *rated our 105x the fastest** & quietest.*** They also liked our manuals and solid track record.****.*

SyQuest & Tape Backups

45SR SyQu., 1 cart	$475
45DR Dual SyQu., 2 carts	969
88SR SyQu., 1 cart	669
88DR Dual SyQu., 2carts	1,399
88/45DR Dual SQ, 2 carts	1,199
150t Teac Tape Backup	595

OptiDisk™ 1000 $2,995

Sony Optical 600mb drive

Tahiti Optical Drive $3,795

DATadrive™ 2Gb $1,395

DATadrive™ 5Gb $1,795

Both bundled with Retrospect.

Call for best prices.

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Direct Color/GX NTSC	Call
Radius Color Pivot	Call
Color Pivot Interface	Call
Radius 19" 24 bit Color System	Call
Radius Accelerators	Call

RasterOps

364 Frame Grabber	$Call
24S-24Si-264 SE30	Call
8L-24L Systems	Call
SuperMac Video Systems	Call
Seiko Trinitron 14"	Call
Adobe Photoshop 2.0	429
DayStar PowerCache 25, 40 & 50 Mhz•	Call

•Ask about our Apple IIci Cache Card trade-in for DayStar products.

Microtek 600ZS Color Scanner w/ Pshop 2.0	1,429
UMAX 600 Color Scanner w/ Pshop 2.0	1,329

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*Cross shipment is subject to product availability and cross shipment guidelines.
**Highest SCSI Evaluator Read/Write of any drive tested, September '91 *MacWorld* review.
***"Quietest drives tested"—March '91, *Macworld* reivew.
****September '91, *Macworld* review.

Most deliveries via Federal Express.

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120 Megabytes	**$599**	120 Megabytes	**$669**
170 Megabytes	**$629**	170 Megabytes	**$699**
210 Megabytes	**$659**	210 Megabytes	**$739**
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30 Day Money Back Satisfaction Guarantee on all Hard Disk Drives!

SyQuest Removable Hard Disk Drives

One Year Warranty!

44mb Removable* **$399**

NEW!

88mb Removable* **$599**

*Cartridge Not Included

44MB Cartridges

Single Cartridge	**$69**
Five Pak—Each	**$67**
Ten Pak—Each	**$64**

88MB Cartridges

Single Cartridge	**$120**
Five Pak—Each	**$116**
Ten Pak—Each	**$110**

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$1,579

OKI Laser 840
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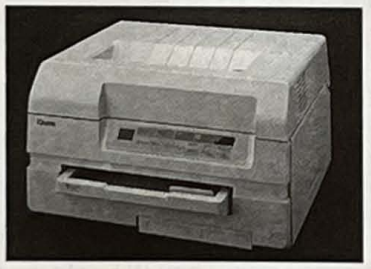

Qume CrystalPrint Pub II
$1,995

Qume CrystalPrint Express
$2,995

QMS PS410
$1,749

Memory

1mb Mac Plus/SE 100ns	**$36**	4 Megabyte 80ns	**$159**
1mb Mac II, IIx, IIcx, IIci, IIsi 80ns	**$42**	QMS PS410 2 Megabyte	**$249**
1mb Mac IIfx 80ns	**$59**	QMS PS410 4 Megabyte	**$399**
		T.I. Microlaser 1 Meg Upgrade	**$99**

Monitors

Sony 1304 14" Trinitron Color	**$599**
MacLand® 14" Color	**$369**
Seiko 14" Trinitron Color	**$449**
GoldStar 14" Color	**$349**

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- Incredibly Reliable!
- Perfect internal for all Macs!*

Fujitsu Drives

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90 MB	3.5"3yr warr, 50,000 MTBF	$338	$398
135 MB	3.5"3yr warr, 50,000 MTBF	$398	$448
185 MB	3.5"3yr warr, 50,000 MTBF	$528	$568
330 MB	3.5" 5 yr warr., 200,000 MTBF*, 9ms Access	$1398	$1498
425 MB	3.5" 5 yr warr., 200,000 MTBF* 9ms Access	$1498	$1598
520 MB	3.5" 5 yr warr., 200,000 MTBF* 9ms Access	$1648	$1748
357 MB	5.25" Full Hght 16ms 200,000 MTBF*	$1198	$1298
680 MB	5.25" Full Hght 16ms 200,000 MTBF*	$1448	$1548
1.2 Gig	5.25" Full Hght 1 5ms 200,000 MTBF*	$2498	$2598

- All 3.5" Drives are available in zero footprint (including a 40watt power supply, and dual AC outlets), or micro cabinets as well as internal for all Mac's.
- All 5.25" Drives are available in zero footprint external (including a 65 watt power supply, cables, and ext. terminators) or as internals for the Mac II, IIx, and IIfx.

Introducing Hitachi Drives

5 Year Warranty! 150,000 Hours MTBF!*

		Internal	External
425 MB	3.5" 5 yr warr. 13ms 150,000 MTBF*	$1398	$1498
1.6 Gig	5.25" Full Hght 12ms 150,000 MTBF*	$2798	$2898

* Mean Time Between Failure is the average life expectancy of a drive.

DAT Tape Backup

WangDat 1.2 Gig Capability $1498
ArDat 1.2 Gig Capability.....$1498

- Up to 10 mb per minute backup time
- Includes SoftBackup II for Fast network and unattended backup capabilities

SyQuest 44MB & 88MB Removables

44MB REMOVABLE.....$448.00
88MB REMOVABLE.....$648.00

- 19ms Access time
- Both Drives include Cartridge
- Dual AC Outlets, 40 Watt power supply
- SCSI Select and 2 Year Warranty

Ricoh Optical

600 MB Optical $1998

- Read/write reliable storage
- 66ms Access Time
- Great for archiving, color scans etc.

Introducing CD ROM

Toshiba 3301.....$568

- Includes driver CD carrier and cables
- 325ms access time

Chinon CDC-431 .....$598

- Includes driver CD carrier and cables,
- 350ms access time, includes 12 function audio remote control

JX-9500PS Sharp Printer 35 Fonts

JX-9500PS 35 Fonts $1598.00

- 2.5 mb Ram Memory
- Adobe Postscript
- MacUser #1 printer 4.5 mice rating
- 35 Fonts, 6 page per minute
- Letter, legal and transperancies
- Includes Appletalk interface!
- Sharp is the manufacturer of the TI Microlaser, this is the same printer, but with 2.5mb!

800 K Floppy Drive $99

These Fujitsu External floppy drives have a one year warranty. Completely compatible. These are brand new slimline drives and they look great!

These drives retail for $259!

Fujitsu 800k
$99.00!

Quantum Drives/Wren Drives

	Internal	External
Q 52 MB 3.5" LPS	$248	$338
Q 105 MB 3.5"LPS	$368	$448
Q 120 MB 3.5"	$578	$668
Q 170 MB 3.5"	$598	$688
Q 210 MB 3.5"	$688	$748
Wren 337 MB RUNNER	$1398	$1498
Wren 600 MB F/H	$1598	$1698
Wren 630 MB RUNNER II	$1998	$2098
Wren 1.2 Gig	$2298	$2398

Monitors!

- 20" Phillips Color Sys. w/RasterOps 8Bit.....$1598
  - W/National Semiconducter 24Bit.....$2398
- 19" Ikegami Mono Sys. $798
- 19" Ikegami Grey Scale Sys. $1098
- 19" Trinitron Color Sys. $2398
  - Ikegami CT-20...Natl. Semi. 24Bit $3198
- 14" GoldStar Color Sys. $388
- 14" NEC Color System.....$438

The NEC MacSync is plug compable with IIsi, CI and the LC

The NEC MacSync is plug compable with IIsi, CI.
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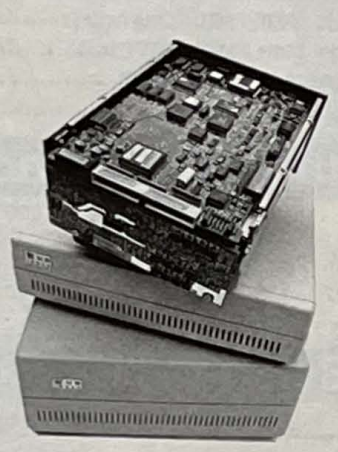
Aim with MacTel for your Apple solutions. MacTel Technology Corporation is a global corporation specializing in the design, manufacturing and distribution of a wide array of Macintosh peripherals. Our state-of-the-art surface-mount manufacturing facilities are located in Austin, Texas, which also hosts the hard drive assembly line, research laboratories and testing center.

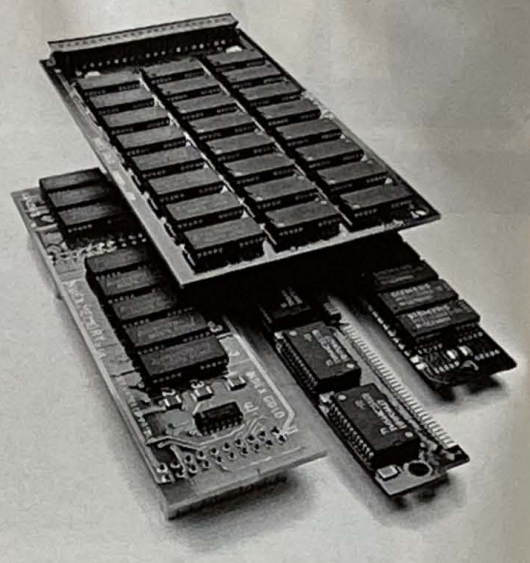


INDEX MEMORY MODULES

GO FOR THE GOLD!

MacTel manufactures and tests our memory modules in-house to ensure the highest possible quality and reliability. All our SIMMs use ***gold traces and contacts*** for greater conductivity and durability. Our field test failure is *less than 1%*! In fact, we have so much confidence in our memory products that we back them with a lifetime warranty.

- 1 Mb surface mounted/ low profile, 70/80 ns $37.95
- 1 Mb fx & LaserWriter II NTX SIMM, 70/80 ns $38.95
- 1 Mb x 9 SIMM, 70/80 ns $43
- 3 Mb Classic memory $99
- Mac LC V-RAM upgrade $69
- 4 Mb surface mounted SIMM, 80 ns, (IIcx, IIci, IIfx, IIsi and LC) $145



- 1 Mb TI microLaser PS 17/35 & XL upgrade $69
- ***Maxima*** virtual memory managment software $40

STORAGE SOLUTIONS

MacTel offers you a number of storage and backup solutions, including a complete line of Index hard drives. Three of our drives have been rated 4 mice by *MacUser* Labs: the MacTel 45R drive (2/91), the Index 1.2 Gb drive (7/91) and the MacTel 2 GB DAT drive (10/91).

The Index HD formatter is System 7 compatible and supports partitioning, password protection and is A/UX compatible.

REMOVABLE - OPTICAL - TAPE

- **Index 45R** w/1 cartridge $479
- Index 88R w/1 cartridge $899
  Index 45R and 88R are bundled with ***Backmatic®*** and ***AutoSave®***
- SyQuest cartridge SQ 400 ..... $69
- SyQuest cartridge SQ 800 ..... $149
- **2 GB DAT drive** w/*Retrospect* software and 1 tape $1499

NEW
- DAT Drive Cleaning Kit $19

NEW
- 1 GB Tahiti optical drive w/1 cartridge $3699

INDEX HARD DRIVES

Quantum drives Index 3.5"

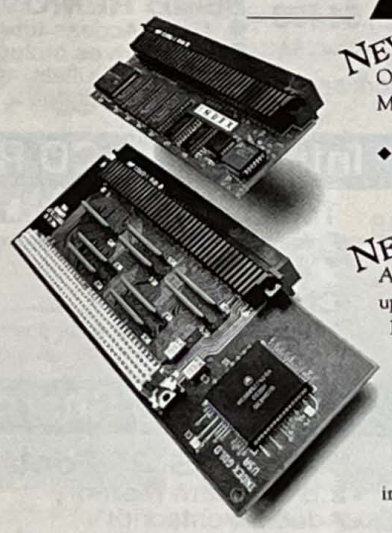
	Internal	External
52 Mb, 12 ms, Slimline	$249	$329
105 Mb, 12 ms, Slimline	$349	$399
210 Mb, 12 ms	$699	$779
425 Mb, 12 ms	$1449	$1529

Imprimis drives Index 5.25"

320 Mb, 16ms	$1179*	$1279
330 Mb, 10.7 ms (Runner)	$1299*	$1399
640 Mb, 16 ms	$1459*	$1559
650 Mb, 10.7 ms (Runner)	$1849*	$1949
1.2 Gb, 16 ms	$2199*	$2299

*Mac II and IIx only

ACCELERATOR BOARDS



NEW
On-board 68882/20 MHz math co-processor with adaptor for Macintosh IIsi. ***Benchmark*** software included.

- **Index Mac IIsi 030 Direct Slot Interface** $99.00

NEW
Accelerate math-intensive operations on your LC operations by up to 39% with a 68882/16 MHz math co-processor —and get a 15% overall CPU improvement. ***Benchmark*** software included.

- **Index LC Mathmate** $99.00

Increase the speed of your Mac IIci up to 33% with MacTel's new CachePro card—offered at an amazingly low introductory price! Easy to install and DA controlled.

- **Index CachePro / Mac IIci** $119.00

Contact the professionals at MacTel now for additional information. We handle only the best in Macintosh hardware, systems and peripherals, with names like Apple, Nikon, RasterOps, Wacom, Sharp and our own top-quality VisionPro and Index brands. Call or fax for a free catalog.

MACINTOSH CPUS AND SYSTEMS

- Mac LC ..... $Call
- Mac IIsi ..... $Call
- Mac IIci ..... $Call
- Mac IIfx ..... $Call

NEW
TELNET phone net $12.99

KEYBOARDS

MacTel's Index line of ADB extended keyboards have an 105-key layout, 15 function keys, cursor control keys and number pad. The French, German and Swiss keyboards come with system software.

Index extended keyboard

- English $99
- French, German, Swiss $119

NEW
- Spanish $119

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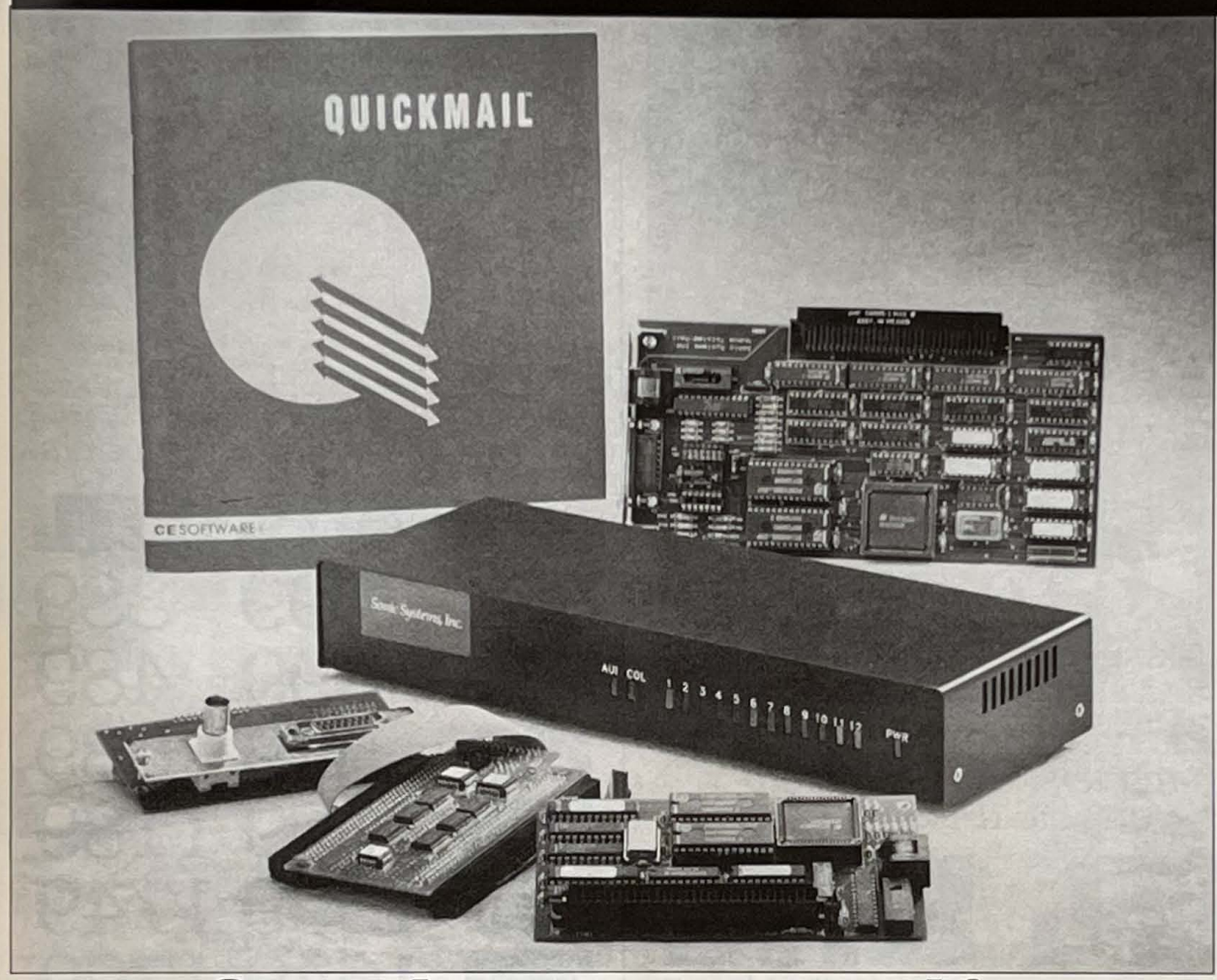
Sonic Systems Ethernet $199



Cable..... Thin Coax
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Cnctr ..... BNC, AUI
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Ether ..... IEEE 802.3
Power 600ma
..... 1.0A (Nubus)
Bandwidth.. 10Mbps
System..... >6.04
Driver. Ethertalk, LAP
Controller.. DP83901
RAM 16K
ROM ..... 256 bytes
FCC..... Class A
Warranty..... 5 yrs.†

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Get 5-7 times better network throughput than Localtalk®**

Full System 7.0 & Ethertalk 1.2 and 2.0 compatibility.

5-10 times the network speed of LocalTalk®.

Instructions for easy installation.

Special Magic-Bus card ($279) allows PDS machines to share the Processor Direct Slot with other cards (monitors, etc.).

Includes driver software and diagnostic utilities.

Any six Ethernet cards*, 7-port HUB & receive 6-user QuickMail™ by CE Software:**

$1599 !

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Quantum 170MB $499

Limited Purchase, Only While Supplies Last

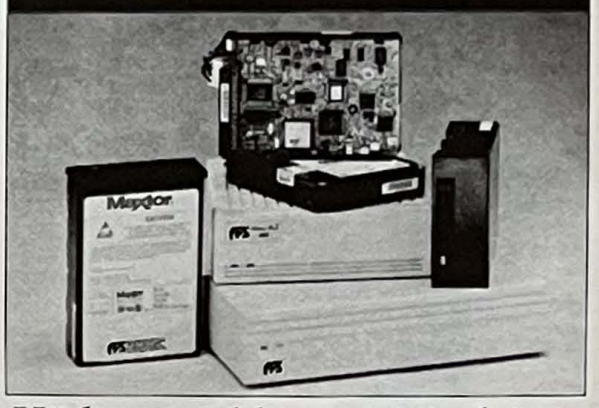
Internal for most Macintosh models. External zero-footprint or compact, portable drives.

MB		INTL	EXTL (Zero-footprint or Compact portable)
52	LP52S or LPS-LP	$249	$339
105	LP105S or LPS-LP	359	449
170	Pro-170s	499	589
210	w/WriteCache™	659	749
425	Pro-425s	1499	1599

Ask about our limited "Microseeds bundle" offer on Redux™, Init-Picker™ and Rival™ when you buy a drive.

Just ask away. *When you phone, you have a right to expect courtesy, logic and a helpful attitude. Many people ask us questions about hard drives, SCSI addresses, termination, etc. We may not know all the answers, but we'll try to find any we don't have. If you decide to place an order, that's nice too.*

Maxtor 213 MB $599



High-speed, low-noise drives for most Macintosh models

MB	INTL	EXTL
80	299	389
120	399	489
213	599	689
340	1099	1189
535	1599	1749
760	1649	1799
1.2G	2649	2849

WREN Drives

MB	INTL	EXTL
300	$1199	$1349
300hh	1199	1299
330	1399	1549
425hh	1499	1599
600	1499	1649
630	1749	1899
630	1899	2049
1.2G	2299	2449

SyQuest

based sub-systems

88 mb $799

SQ-555	$479
SQ-5110	799
SQ-555 Dual 44	899
SQ-5110 Dual 88	1549

Add'l Cartridges $69 & $129

Monitors

Dual Page $799

Mono Sampo w/Lapis card fts SE, SE/30, Nubus Mac IIs

- **30 Day Money Back Guarantee** • All Drive products carry a 30 day Money-back guarantee. Your risk in the transaction is the cost of shipping.
- **Disk for Disk Replacement Warranty** • Quantum, Maxtor (excluding Panther 1.2G), Syquest and ARDAT Drives carry a two year "parts & labor" disk-for-disk replacement warranty. WREN, Teac, WangDAT, Conner drives and Syquest Cartridges carry a one year "parts & labor" disk-for-disk replacement warranty.
- **Brackets and Cables Included** • All Hard Drives include brackets, cables, cords and LED's required for operation in the specified Macintosh. All Hard Drives come pre-formatted with Apple's latest stable all-platform System software, 18.8 MB of Publicly Distributable software from the B'MUG Library, and the "ALLIANCE POWER TOOLS" SCSI formatter/hard partitioner.
- **30 Day Performance Guarantee** • If your drive fails to perform properly in the first 30 days and our technical support staff can't solve the problem over the phone, we'll ship you a replacement drive overnight and have your suspect drive picked up at our expense. Offer is subject to some limitations. Products being returned for credit and international orders do not apply.
- **Toll-Free Technical Support** • Toll-Free Technical Support, 9:30am to 7pm Monday thru Friday, Central Time. As often or for as long as you need.

• Prices and Specifications subject to change without notice.

WangDAT

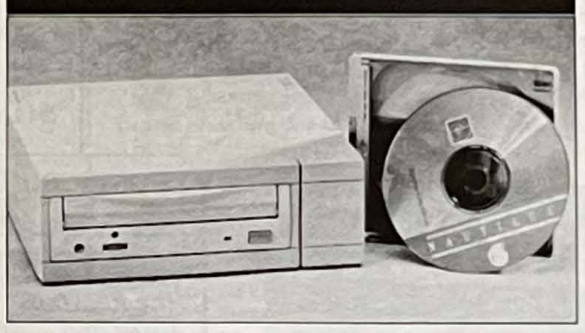
1.3 Gb DAT Tape System

1300 $1349

Teac 155	$599
WangDAT	1349
WangDAT	1999
Python	1499

Includes RETROSPECT™ by Dantz Development

Toshiba 3301 CD ROM



Limited offer, includes free "Nautilus" & "Showcase" CD

Toshiba $579

Sonic

Systems

EtherNet

Check our SPECTACULAR Net-Pack w/ QuickMail™

TwP/TnT	$199
Net-Pack	1199
Net-Pack w/Hub	1599
7 Port Hub	499
13 Port Hub	699

All Net-Packs include QuickMail™ by CE Software at no extra charge! Magic Bus cards allow SE/30 and SI to share PDS slot w/ another card... $279, $79 extra in Net Pack.

While They Last

offers below are good only while quantities last!

Quantum 170mb drives. Special Purchase from Quantum. Quantum 2 yr Warranty. Spectacular Quantum Performance! **$499**

Conner 40 mb drives. Internal model fits all current Macs. 25ms avg. access, 20,000 hr MTBF, 1 yr Mfg warranty. **$179**

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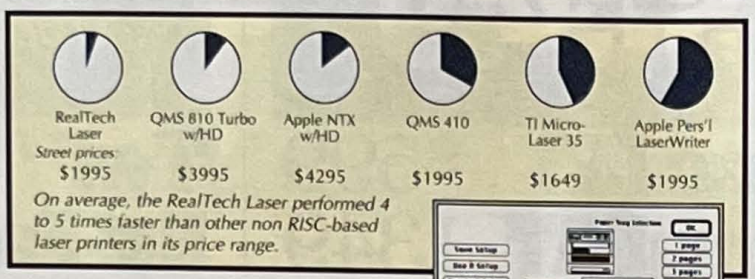
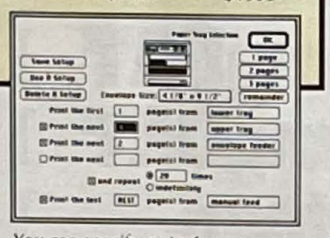


On average, the RealTech Laser performed 4 to 5 times faster than other non RISC-based laser printers in its price range.



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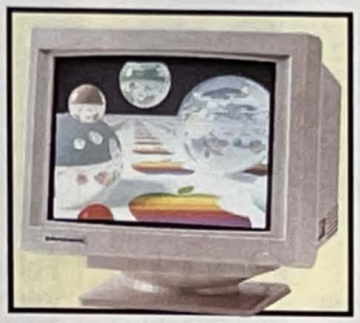

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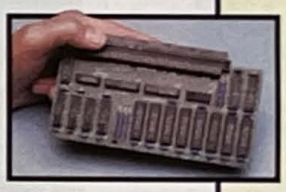

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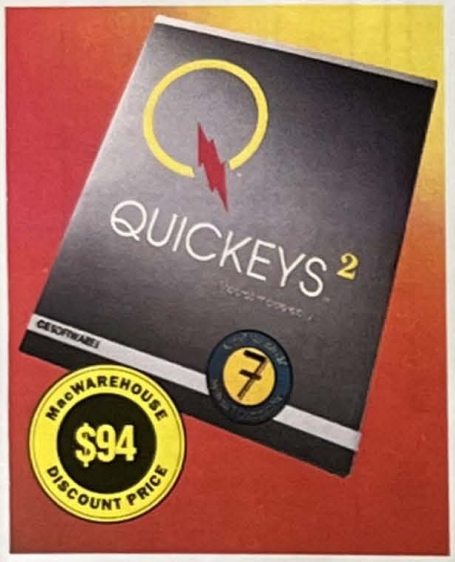


QuicKeys 2 v.2.1

(CE Software) Facilitates data being sent between applications, applications being launched, commands being executed, calculations made, and data returned to the user all without leaving the user's current working documents. Its 32 bit clean, and Apple Events Extensions and balloon help make it a System 7 Savvy product. Put macros into a menu so they work like a part of the application. QuickTimer activates macros at pre-set times and dates. With QuicKeys extensions you can write your own functions, or import specially written extensions for your favorite applications. **UTI0188** ***FaxFACTS 6529***

1st Impression: The Desktop Bindery

(Avery Dennison) Solves the problems of finishing your desktop publishing project. This fully automatic desktop binding system replaces complicated equipment, tedious hole punching, alignment and plastic prongs. Combines advanced thermal technology with the abiltiy to bind ten documents at once, in seconds. **ACC0589** ***FaxFACTS 1010***

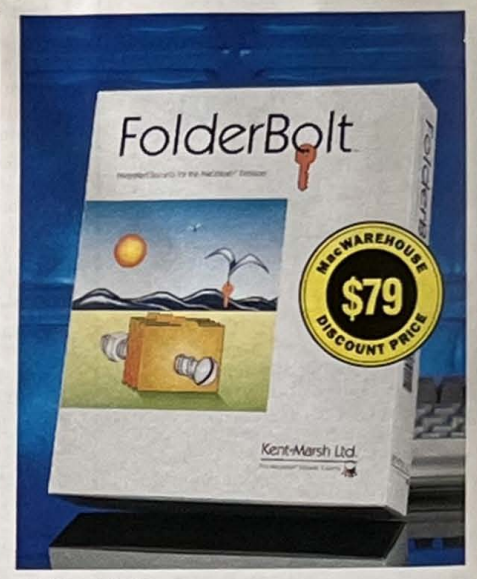
1st Impression First Pack

Includes 70 "Classic" covers of five spine sizes packed in a reusable storage container. **ACC0590** ***FaxFACTS 1020***

FileGuard 2.7

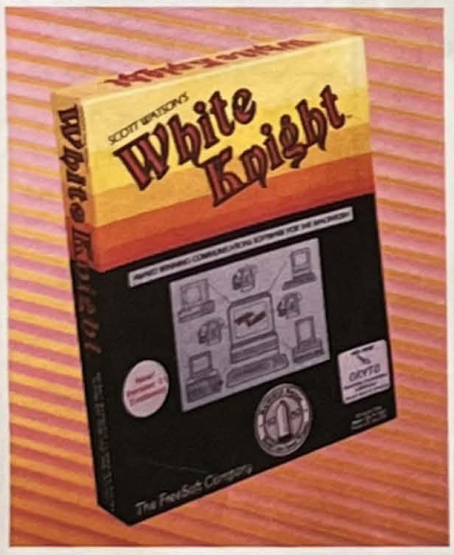
MacUser Rating 4/91

(ASD Software) "It's sleek, fast, and safe. I highly recommend it." MacUser April, 1991. Protect your Hard Drives and Partitions from unauthorized access (including security bypass with a system diskette), copying and erasure; Applications and File/Folders (including system folder) from unauthorized access, deletion, and/or illegal copying; Desktop (including system folder) from alterations by unauthorized user; Keep an eye on System Usage with the system users log which continuously tracks user/group activity. System 7.0 compatible. **UTI0135** ***FaxFACTS 6806***



FolderBolt

(Kent Marsh) "FolderBolt compliments the desktop...Subtle yet sensible...Takes the edge off security...Redefines standards." MacTutor July 1991. Simply shift-click to create completely locked folders, read-only folders, or drop folders. Once locked they can't be opened, duplicated, deleted or moved until you double-click & provide the password. Features complete unlocking at start up, activity logging, and locking at shutdown. Includes full administrator override. FolderBolt is a welcome addition to the Mac security arsenal MacWeek June 1991. The only desktop security that's System 7 Savy. **UTI0212** ***FaxFACTS 6549***



White Knight V. 11

(FreeSoft) This 11 award winning communications software is the successor to the Legendary Red Ryder software. The "new features" list is 20 pages long and includes: A reworked user interface, with completely reorganized menus. Enhanced terminal support, with support for the VT-102 added. White Knight supports the new ZModem protocol, as well as more versions of XModem, YModem and Kermit. It works properly with Multifinder, and supports both color QuickDraw and large monitors. **COM0060** **FaxFACTS 1778**

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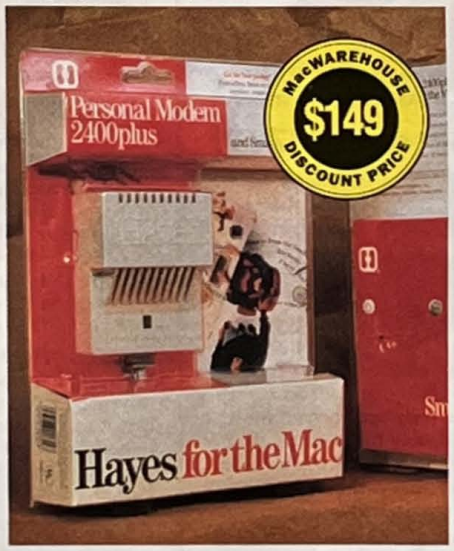
(LB Innovators) The WristSaver cradles your wrist with a contoured neoprene rubber pad and a nylon covering. It's ergonomically designed to support your wrist at the proper angle to help avoid the pain associated with Carpal Tunnel Syndrome. The WristSaver MousePad provides a comfortable rest for your wrist, plus a conventional mouse pad. Simple finger movements replace sliding the entire arm or hand. **WristSaver Bundle BND0031 WristSaver ACC0550 MousePad ACC0634 (Available in Gray, Black, Red or Navy)** ***FaxFACTS 1018***



Hayes Personal Modem 2400 Plus with Smartcom

(Hayes) Provides you with everything you need to go on-line. This 2400 baud modem has a built-in call-monitoring speaker and two LEDs, plus both phone and computer cables. Included in the package is the Smartcom terminal software to make using your modem simple and convenient. It fully supports the Mac interface. It also emulates popular terminals, such as TTY and VT54/102, to make mainframe and mini access easy. File transfer protocols include XModem, YModem, and MacBinary. Smartcom even allows you to automate log-ons. **MOD0060** ***FaxFACTS 5100***

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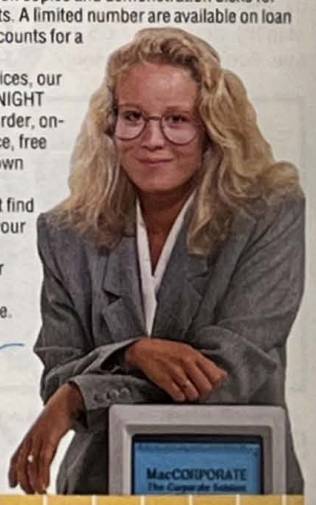

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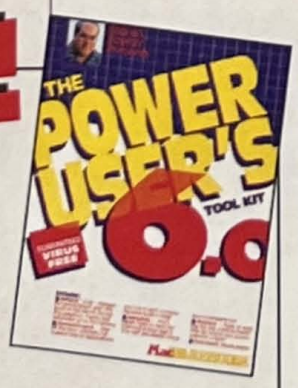

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Capacity			Internal	External
40mb	3.5" Low Profile	25ms	$215	$275
120mb	3.5" Low Profile	25ms	$375	$435
200mb	3.5" Half Height	16 ms	$599	$659

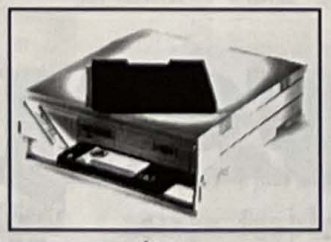
Conner Drives have a ONE Year Warranty.
Conner 40 & 120 are perfect for the Mac Classic, LC, and IIsi.
Conner Drives include the ClubMac Package.

Call for Educational Pricing

NEW!! **iomega®**

Bernoulli Transportable 90MB $799

- Effective Access Time: 19 ms
- Capacity: 90MB formatted
- **Includes Mac Interface Kit**



90MB Cartridge $140

" The Bernoulli 90 has become our large-capacity removable-drive of choice".
MacWEEK, 08/06/91 Issue

Iomega Bernoulli Transportable has a ONE Year Warranty.
Cartridges have a FIVE Year Warranty!!

ClubMac Package

SCSI Director™ Hard Disk Formatting Utility
- All ClubMac Drives are System 7.0 compatible!!
- A/UX supported
- Partition & Password Protection

- ClubMac Package:
  Internal Drives include mounting brackets, cables, and ***SCSI* Director™** Formatting Utility
  External Drives include a 25/50 pin SCSI cable, power cable, ***SCSI* Director™** Formatting Utility, and a zero-footprint cabinet (two 50 pin SCSI ports, removable termination, auto-switching power supply)
- All hard drives come pre-formatted and tested.
- All drives have internal termination.
- Termination can be removed upon request.
- Daisy chain cable substituted upon request.
- All capacities and speeds are manufacturer's specs. Actual specs may vary.

Tape BackUp Systems

Teac	155mb	$579
Teac	600mb	$779
WangDat 1300HS	1.3-2.0GIG	$1295
WangDat 2000	5.0GIG	$1569
ARDat	2.0GIG	$1389
Exabyte 8200	2.2GIG	$2095
Exabyte 8500	5-8GIG	$3329

All Tape BackUp Systems include a ONE Year Warranty,
one cassette, RETROSPECT (v.1.3) backup software,
and all necessary cables.

SyQuest TECHNOLOGY

44mb	5.25" Removable Disk Drive 20ms	$429
88mb	5.25" Removable Disk Drive 20ms	$639
Dual 44mb		$779
Dual 88mb		$1099
Dual 44mb & 88mb		$1039
(Includes one 44mb cartridge & one 88mb cartridge)		
44mb Cartridge		$66
88mb Cartridge		$115

SyQuest Drives have a TWO Year Warranty!
Includes one cartridge, all necessary cables, and ***SCSI* Director™** Formatting Utility.

Ask about RetroSpect Bundle

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HEWLETT PACKARD

5 Year Warranty

Capacity			Internal	External
220mb	3.5" Half Height	13ms	$729	$789
324mb	3.5" Half Height	13ms	$1155	$1215
410mb	3.5" Half Height	13ms	$1405	$1465
330mb	5.25" Full Height	14ms	$1145	$1245
645mb	5.25" Full Height	13.5ms	$1479	$1579
1.0GIG	5.25" Full Height	13.5ms	$2215	$2315
1.3GIG	5.25" Full Height	13.5ms	$2719	$2819

Hewlett Packard Drives have a FIVE Year Warranty! HP Drives include the ClubMac Package.

Optical Drives

650mb Eraseable $2875

- Average seek time 95ms • Average latency 12.5ms
- Data tranfer rate, reads 680 KB/sec (host dependent)
- Magneto - Optical and/or write once media
- Handles rewritable function and write once function

Hewlett Packard Optical Drive includes a ONE Year Warranty and one cartridge.

DAT Drives

- 3.5" Half Height • 4mm tape • SCSI II Compatible
- 30 sec Average Search Time • HP media / HP cleaning kit
- Firmware downloadable and downward compatible

2.0GIG DDS	$1699
5-8GIG DDS	$2099

Hewlett Packard DAT Drives include a ONE Year Warranty, one cartridge, and RETROSPECT (v.1.3) backup software.

FUJITSU

Unbeatable Quality and Performance

Capacity			Internal	External
330mb	3.5" Half Height	9ms	$1497	$1557
425mb	3.5" Half Height	9ms	$1567	$1627
520mb	3.5" Half Height	9ms	$1677	$1737
345mb	5.25" Full Height	16ms	$1197	$1297
645mb	5.25" Full Height	16ms	$1447	$1547
1.2GIG	5.25" Full Height	11.5ms	$2367	$2467

Fujitsu Drives have a FIVE Year Warranty.
Fujitsu Drives include the ClubMac Package.

Maxtor®

Capacity			Internal	External
80mb	3.5" Low Profile	17ms	$285	$345
207mb	3.5" Half Height	15ms	$635	$695
330mb	3.5" Half Height	13ms	$979	$1039
345mb	5.25" Full Height	14.5ms	$1099	$1199
645mb	5.25" Full Height	16.5ms	$1449	$1549
1.0GIG	5.25" Full Height	13ms	$2025	$2125
1.4GIG	5.25" Full Height	13ms		$2645

Maxtor Drives have a TWO Year Warranty.
Maxtor 80 is perfect for the Classic, LC, and IIsi.
Maxtor Drives include the ClubMac Package.

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by

Seagate

Capacity				Internal	External
420mb	3.5" HH		14ms	$1269	$1329
320mb	5.25" HH	Wren-6	14ms	$1155	$1215
320mb	5.25" FH	W-Run	10.7ms	$1269	$1369
645mb	5.25" FH	W-Run II	11.9ms	$1725	$1825
645mb	5.25" FH	Wren-6	15.5ms	$1425	$1525
1.0GIG	5.25" FH	Wren-7	15ms	$1989	$2089
1.4GIG	5.25" FH	Wren-8	15ms	$2399	$2499

Seagate Drives have a ONE Year Warranty.
Internal Drives fit the Mac II, IIx, and IIfx. HH = Half Height, FH = Full Height.
Seagate Drives include the ClubMac Package.

EXTENDED FIVE YEAR WARRANTY AVAILABLE

ClubMac

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7 Musick • Irvine, CA 92718

1-800-CLUBMAC

EPSON

LIMITED TIME

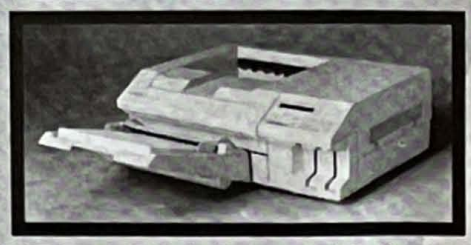
FREE
ColorStudio
ImageStudio
ScanDo/DA

ES-300C Scanner

$1185

- Fixed 300 dpi high resolution scanning with adjustability from 50 to 600 dpi
- MAC/MS-DOS PC compatible
- 24-bit color & 8-bit monochrome scanning
- Epson's TruePass scanning system (3 separate light bars for advanced one-pass scanning)
- **CALL FOR EDUCATIONAL PRICING**

EPSON



EPL-7500 Laser Printer

$1895

- TRUE Adobe PostScript
- High-speed RISC processor
- Parallel, serial and AppleTalk interface standard
- HP LaserJet Series II Emulation
- 6 ppm • 35 resident fonts
- 2 MB RAM standard, expandable up to 6MB
- MicroArt Printing with 300 X 300 dpi resolution
- 2 Year Warranty
- **CALL FOR EDUCATIONAL PRICING**

OKIDATA

NEW !!

OL830 LED Page Printer

$1529

- 8 ppm • 300 dpi
- 17 scalable fonts
- 2MB RAM std, up to 6MB
- Emulation: Adobe PostScript, HP LaserJet II, and Apple Talk Interface
- Dual 200 sheet tray capability
- 1 Year Warranty, 5 Year LED Printhead
- On-Site Service AVAILABLE

MICROTEK

600ZS Color Scanner

$1449

- Up to 600 dpi high resolution scanning
- OCR Compatible
- Built in SCSI Interface for the MAC
- **FULL** version of Adobe Photoshop 2.0 (advanced 24-bit color editing & color separation)

FREE
Adobe Photoshop

NEC

LIMITED TIME

SilentWriter2 Model 90

$1489

- 6 ppm • 16 MHz
- Minolta Engine
- 250-sheet Universal Paper Tray

NEC

SilentWriter2 Model 990

$2849

- 8 ppm • Canon Engine
- 32 MHz RISC Processor
- Built in SCSI Port
- Auto-Emulation Switching

Standard Features Model 90 and Model 990

- TRUE Adobe PostScript
- 300 dpi high resolution
- Includes AppleTalk Interface
- 35 scalable fonts
- 2 MB RAM expandable to 4 MB
- **FREE 90 Day On-Site Service**

1-800-CLUBMAC

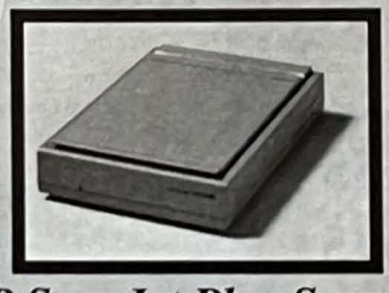
Educational Corner

HEWLETT PACKARD

HP DeskWriter Printer

$439

- 300 dpi • 1-2 ppm
- Appletalk and RS-422-A Serial Interface
- Built-in sheet feed (up to 100 sheets)
- **FREE cable!**



HP ScanJet Plus Scanner

$1049

- 300 dpi scanning for both DTP (image) and OCR (text) applications
- **Includes MAC Interface**
- Includes color-image editing & grayscale software

HP DeskWriter C Printer

$749

- 300 dpi • 1-2 ppm
- 4-7 mins for full color
- AppleTalk, RS-422-A Serial Interface
- Built-in sheet feeder up to 100 sheets
- **THREE Year Warranty!!**

HP ScanJet IIc Scanner

$1349

- High quality 400 dpi monochrome & color scanning
- Fast, one-pass image scanning
- Enhanced OCR accuracy with HP AccuPage software (Optional)
- Optional Automatic Document Feeder

Acceleration, Memory, and More . . .

DAYSTAR DIGITAL

MONEY BACK 90 DAY GUARANTEE

Cache Cards for the SE/30, LC, II, IIx, IIsi, IIci, IIcx

FastCache for IIsi / IIci	$289 / $255
25 MHz PowerCache	$675
40 MHz PowerCache	$875
40 MHz PowerCache (68882)	$1075
50 MHz PowerCache	$1545
50 MHz PowerCache (68882)	$1810
ATTO 32K 030 Cache Card (Mac IIsi)	$209
ATTO 64K Cache Card	$149

radius Rocket $2245

Performer Accelerator 16 MHz (Classic)	$230
68881 Math Co-Processor Upgrade(Classic)	$75

MICRON TECHNOLOGY, INC.

Mac II or SE/30 8-bit Video Card	$289
Mac IIci Cache Card	$199
1mb - 8 - 80ns Simms	$36
2mb - 8 - 80ns Simms	$89
4mb - 8 - 80ns Simms	$145
16mb - 8 - 80ns Simms	$865
1mb Classic Simms	$55
1mb FX Simms	$39
4mb FX Simms	$155

We Carry Most Accessories For Our Lasers

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Radius Color Pivot Display

Provides portrait and landscape orientation in a single display

Color Display Systems

Color Pivot Display Systems **$1790**
- 15" dual-orientation, anti-glare, color full page display
- Available for the SE/30, LC, IIsi, or II NuBus

Color Display/19 Systems
- 19" Two Page Trinitron Display • 1152 X 882 X 71 Hz at 82 dpi

PrecisionColor/8 Interface (Available for IIsi)	$3265
DirectColor/8 Interface	$3905
DirectColor/24 Interface	$4930
DirectColor/GX Interface (NTSC)	$3265

Color Display/21 Systems
- 21" Two Page Color Display • 1152 X 882 X 71 Hz at 78 dpi

PrecisionColor/8 Interface (Available for IIsi)	$3395
DirectColor/8 Interface	$4035
DirectColor/24 Interface	$5060
DirectColor/GX Interface (NTSC)	$3395

Gray Scale & Monochrome Systems

Pivot Display Systems **$975**
- 15" monochrome, dual-orientation, full page display
- Resolution of 640 X 870 X 75 Hz at 78 dpi
- Available for the SE/30, LC, or II NuBus

Full Page Display Systems **$765**
- 15" monochrome portrait display
- Available for the SE or Classic

Two Page Display/19 **$1279**
- 19" monochrome, landscape, two page display
- Resolution of 1152 X 882 X 71 Hz at 82 dpi
- Available for the SE, SE/30, IIsi, or II Nubus

Two Page Display/21 **$1535**
- 21" monochrome, landscape, two page display
- Resolution of 1152 X 882 X 71 Hz at 74 dpi
- Available for the SE, SE/30, IIsi, or II Nubus

RasterOps

RasterOps 21" Color System
- Anti-glare screen
- 1152 X 870, 75 Hz at 77 dpi
- Tilt & swivel
- Compatible with 24XLi, 24XLTV, 8XLi, and 8XL Display Boards

Display Boards

24s (13" 24-bit Color)	$379
24si (13" 24-bit Accelerated)	$569
264/SE30 (13" 24-bit Color for SE/30)	$569
24XLi (21" 24-bit Accelerated Color)	$2205
8XLi (21" 8-bit Accelerated Color)	$945
8XL (21" 8-bit Color)	$440

RASTEROPS THREE YEAR WARRANTY

MultiMedia Products

24STV (13" 24-bit Accel. Color Video I/O)	$1135
24XLTV (21", 19", 13" 24-bit Accel. Color Video I/O)	$2519
ColorBoard 364 (13" 24-bit Color Video)	$629

Monitors

21" Color Hitachi Monitor **$2835**
- Resolution of 1152 X 870 at 77 dpi

19" Color Hitachi Monitor **$1765**
- Resolution of 1024 X 768 at 72 dpi

19" Color Trinitron Signature Series Black **$2709**
- Limited time offer • Resolution of 1152 X 768 at 72 dpi

19" Color Trinitron Monitor **$2709**
- Resolution of 1024 X 768 at 72 dpi

NEW !!

Expresso Personal Slide Scanner

$629
- Scans negative or positive 35 mm film
- Outputs a video signal to any NTSC compatible display
- Compatible with any VCR, video camera or can be connected directly to any television
- Incl. video cable, slide carrier, strip film, and power cable

Call ClubMac for More RasterOps Products

SUPERMAC

THE SUPERSOURCE FOR COLOR

5 Year Warranty

True-Color Graphics Card for 13" Displays and the Macintosh II Family

Graphic Cards

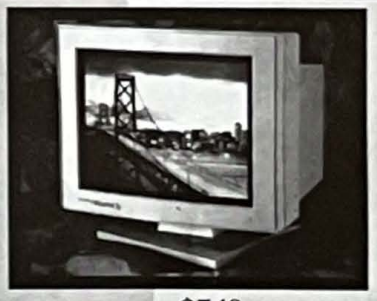
Spectrum/24 PDQ (24-bit High-Speed, Color for 13"- 21")	$2625
Spectrum/24 Series III (24-bit High-Speed, Color for 19")	$1969
Spectrum/8•24 PDQ (si) (24-bit Accel. Color for 12", 13", 8-bit for 15" - 21")	$919
Spectrum/8 si, Spectrum 8 LC, Spectrum 8 Series III (8-bit Color for 12" - 21")	$655
ColorCard 24 (24-bit Color for NuBus Macintosh Systems w/ Apple 13" RGB)	$459
Graphics Accelerator (QuickDraw Accelerator for the ColorCard/24)	$265

Displays

19" Platinum Display (Gray-Scale/Monochrome, 1024 X 768 at 72 dpi)	$919
21" Platinum 2-Page Display (Gray-Scale/Monochrome, 1152 X 870 at 77 dpi)	$1179
19" SuperMatch Color Display (Color, 1024 X 768 at 72 dpi)	$1835
21" SuperMatch 2-Page Color Display (Color, 1152 X 870 at 77 dpi)	$2885

Call ClubMac for More SuperMac Buys

SAMPO AMERICA



The MAC OfficePRO IIa System
20" High Resolution Grey Scale Display
- 1024 X 768 resolution • 256 shades of gray
- 20" CRT for 2-page format
- For scanning applications & medical imaging

Mac OfficePRO II Graphic System **$749**
- 20" high resolution monochrome display • 1024 X 768 at 72 dpi

Mac OfficePRO IIa Graphic System SE/30 or LC / II **$1069 / $1185**
- 20" high resolution grey scale display • 1024 X 768 at 72 dpi

AlphaScan Plus Color System **$809**
- 14" multicolor autosyncing display • 0.28 mm dot pitch • 640 X 480 resolution

AlphaScan Plus Monitor **$445**
- 14" multicolor autosyncing display • 0.28 mm dot pitch • 640 X 480 resolution

AlphaScan LS Monitor **$1685**
- 20" Hitachi multicolor high resolution autosyncing display • 1024 X 768

General Information . . .
- Visa and Mastercard accepted. No surcharge. Credit card orders are billed at time of shipment.
- Prices good for stock on hand. All prices subject to change without notice.
- University POs accepted with NET 30 terms. Corporate POs accepted upon APPROVAL.
- All shipments are FOB origin. Prices do not include freight. COD orders accepted, limit $1500.

Warranties . . .
- All items manufactured by ClubMac are returned to ClubMac for warranty repair.
- All items carry manufacturer's warranty.

Money Back Guarantee . . .
- All items manufactured by ClubMac carry a 30 day money back guarantee.
- ClubMac provides 30 day money back guarantee on all other products if manufacturer offers guarantee.
- Laser Printers, Scanners, Software, Monitors, and special order items do not carry a money back guarantee.
- All implied guarantees do not apply to price reductions. Some limitations apply.

Returns . . .
- Any product that is returned WITHOUT a RMA number will be refused and sent back to customer at customer's expense. Call for RMA number. Proof of purchase is REQUIRED.

VISA MasterCard

ClubMac

1-800-CLUBMAC

Info & Tech (714)768-1490 • Order Tracking (714)768-4208 • Fax (714)768-7307

7 Musick • Irvine, CA 92718

CPU's and More...

Free 1200 Baud Hayes Modem !
Buy any Apple system and a monitor from Mac and More and we'll give you a modem. But supplies are limited so place your order while they are still in stock!!!

Macintosh Classic	$845.00
Macintosh Classic 2/40	$1199.00
Macintosh LC 2/40	$1599.00
Macintosh IIsi 3/40	$2299.00
Macintosh IIci 5/0	$3199.00
Macintosh IIfx 4/0	$4799.00
Macintosh IIsi NuBus Adapter Card	$199.00
Macintosh IIsi 030 Direct Slot Card	$199.00
Apple IIe Card for Macintosh LC	$149.00
PSI Crunch-It! math chip for Mac LC	$129.00
Apple Extended Keyboard	$160.00
Apple Standard Keyboard	$90.00
MacPro Plus Extended Keyboard	$124.00

Systems and More...

Mac Classic Intro Package — $1674
4Mb of RAM, 40 Mb internal hard disk, Mouse, Keyboard, and StyleWriter printer.

Mac LC Student Package — $2443
4 Mb of RAM, 40 Mb internal hard disk, Mouse, Microphone, Keyboard, Apple 12" RGB monitor and StyleWriter printer.

Mac IIsi Starter Package — $2999
3 Mb of RAM, 40 Mb internal hard disk, Apple standard keyboard, Mouse and an Apple 13" RGB Color monitor.

Mac IIsi Office Package — $4438
5 Mb of RAM, 120 Mb internal hard disk, 40 Mb ETC External SCSI hard disk, mouse, microphone, Apple standard keyboard, Apple 13" RGB monitor, and Personal LaserWriter LS.

Mac IIci "24-bit" Package — $5599
5 Mb of RAM, 213 Mb internal hard disk, E-Machine 24-bit Futura SX board, Apple 13" RGB Color monitor, Apple extended keyboard and Mouse.

Printers and More...

If you need it in print, the collection of printers we have to offer can't be beat in perfomance or price!

QuickDraw

Apple ImageWriter II	$429.00
HP DeskWriter w/AppleTalk Interface	$525.00
GCC PLP II & IIS	Call

TrueType

Apple StyleWriter	$439.00
Apple Personal LaserWriter LS	$929.00
Microtek TrueLaser	$1795.00

First TrueType and Postscript compatible printer

PostScript

Apple Personal LaserWriter NT	$1799.00
Apple LaserWriter II NT	$2729.00
Apple LaserWriter II NTX	$3399.00
Epson EPL-7500 with RISC processor	$1949.00
GCC BLP Elite	Call
TI MicroLaser PS17 w/AppleTalk	$1299.00
TI MicroLaser PS35 w/AppleTalk	$1680.00
NEC SilentWriter 2 Model 90	$1649.00
QMS PS-410	$1749.00

Internal Drives and More...

Quantum, Maxtor and Connor drives are three of the best on the market. They are fast and reliable. All ETC internal drives come with brackets, cables and software.

ETC 52 Mb Quantum LPS, 17 msec	$249.00
ETC 105 Mb Quantum LPS, 11 msec	$369.00
ETC 120 Mb Connor-1", 19 msec	$399.00
ETC 130 Mb Maxtor Cheyenne, 15 msec	$429.00
ETC 170 Mb Quantum PRO, 11 msec	$589.00
ETC 213 Mb Maxtor LXT, 15 msec	$649.00
ETC 340 Mb Maxtor LXT, 13 msec	$999.00
ETC 535 Mb Maxtor LXT, 13 msec	$1599.00

External Drives and More...

ETC's external drives come in a zero-footprint half-height cases with a Universal power supply, power outlets, push button SCSI addresses, cables, and formatting software.

ETC 52 Mb Quantum LPS, 17msec	$329.00
ETC 105 Mb Quantum LPS, 11 msec	$449.00
ETC 170 Mb Quantum PRO, 11 msec	$679.00
ETC 213 Mb Maxtor LXT, 15 msec	$739.00
ETC 340 Mb Maxtor LXT, 13 msec	$1099.00
ETC 535 Mb Maxtor LXT, 13 msec	$1689.00

Big Hard Drives and More...

If you need lots of on-line storage, we have the best value in the market. With a 5 1/4-inch form factor, ETC Internal drives can be use in the Mac II, IIcx, and IIfx.

Internal

ETC 307 Mb WREN-4, 14 msec	$1149.00
ETC 337 Mb WREN-Runner-1, 10.7 ms	$1299.00
ETC 676 Mb WREN-5, 16.5 msec	$1449.00
ETC 676 Mb WREN-Runner-2, 12 ms	$1749.00
ETC 1.05 Gig WREN-7, 15msec	$2099.00
ETC 1.2 Gb Maxtor	$2149.00
ETC 1.6 Gb Maxtor	$2699.00

External

ETC 307 Mb WREN-4, 14 msec	$1299.00
ETC 337 Mb WREN-Runner-1, 10.7 ms	$1399.00
ETC 676 Mb WREN-5, 16.5 msec	$1599.00
ETC 676 Mb WREN-Runner-2, 12 ms	$1899.00
ETC 1.05 Gig WREN-7, 15msec	$2249.00
ETC 1.2 Gb Maxtor	$2299.00
ETC 1.6 Gb Maxtor	$2849.00

Removables and More...

If you and your data are always on the move, don't shut-down or backup without one of these.

ETC 45R SyQuest Removable — $429
New low price includes one cartridge

ETC 88R SyQuest Removable — $649
Includes one cartridge. Buy now and get a free 1200 baud modem

ETC 45DR Dual SyQuest — $799
Two removable drives in one box. Includes one cartridge! The ETC 88DR Dual SyQuest Drive is also available for $1299.00

45 Mb Syquest Removable Cartridge	$63.00
88 Mb Syquest Removable Cartridge	$129.00

Extended Warranty Service for your Macintosh

CLUB 24

As the fastest-growing direct reseller of Macintosh systems, peripherals and software, Mac and More can now double the warranty on your Mac system with membership in Club 24. Services include:

- 24 month warranty on Apple products
- 72 hour repair or replace turn around
- Shipping via FedEx included both ways

Want more details? Call 1-800-MAC-0052 now!

Video and More...

We have a complete collection of Apple and Apple compatible video products. Call us with your video requirements, and we will help you choose a video system that is right for you and your system.

Apple 12" Monochrome Monitor	$229.00
Apple 12" RGB Monitor	$429.00
Apple 13" RGB Monitor	$669.00
Apple 15" Portrait Monitor	$769.00
Apple Two Page Monitor	$1199.00
Seiko 14" Trinitron RGB	$639.00
Macintosh Display Card 4•8	$439.00
Macintosh Display Card 8•24	$545.00
Macintosh Display Card 8•24 GC	$1349.00
512K VRAM Upgrade for Mac LC	$99.00

High-end Video and More...

We now carry E-MACHINES
Call for the most competitive prices around!

RasterOps

21" Hitachi Color System

with RasterOps 24XLi	$5099.00

19" Color Trinitron Signature System

with RasterOps 8XLi	$3729.00

19" Hitachi Color Systems

with RasterOps 8XLi	$2789.00
with RasterOps 8XL	$2329.00

Mac LC and Classic Systems

RasterOps 8LC 19" Hitachi System	$2399.00
ClearVue/LC 19" Monochrome System	$1199.00
ClearVue/Classic 19" Mono System	$1199.00

Mac Display Boards

RasterOps 24XLi Display Board	$2299.00
RasterOps 8XLi Display Board	$959.00
RasterOps 8XL Display Board	$449.00
RasterOps 24si Display Board	$579.00
RasterOps 24S Display Board	$389.00
ClearVue/GSXL Gray Scale Board	$639.00

Multimedia Boards

RasterOps 24XLTV Board	$2559.00
RasterOps 24STV Board	$1169.00
CorrectColor Calibrator	$1899.00
NEW! Expresso Slide Scanner	$669.00

Radius

Pivot Displays

Color Pivot Display with soft pivot	$1325.00
Color Pivot 8-bit System	$1835.00

for SE/30, LC, II, IIsi

Pivot Display with soft pivot	$755.00
Pivot 8-bit System	$999.00

for SE/30, LC, and NuBus

Full Page Displays

Full Page Display for Classic	$875.00
Full Page Display for LC	$885.00
Full Page Display for IIsi and IIci	$629.00

gets 16 shades of gray w/ built-in video

Direct Color Systems

DirectColor/8 with Color Display/19	$3949.00
DirectColor/8 with Color Display/21	$4069.00
DirectColor/24 with Color Display/19	$4959.00
DirectColor/24 with Color Display/21	$5089.00

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If you need networking solutions today, we can provide you with everything you need. We carry the full Asanté Line including FriendlyNet compatible products.

Phone network adapters	$19.00
AppleShare File Server Software 2.0	$599.00
Macintosh II EtherTalk NB Card	$499.00
Asanté MacCon+ LC E&T	$249.00
Asanté MacCon+ IIE or 30iE	$249.00
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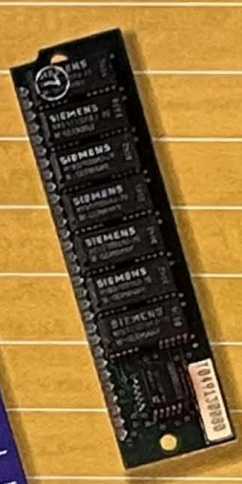

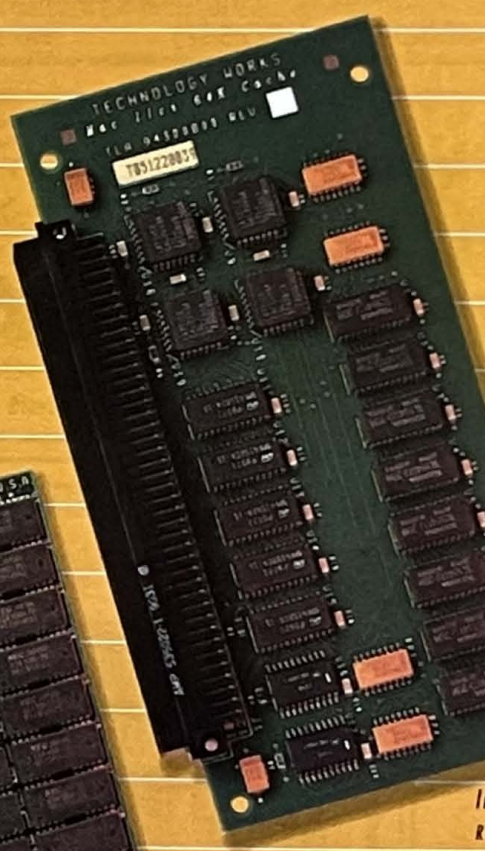

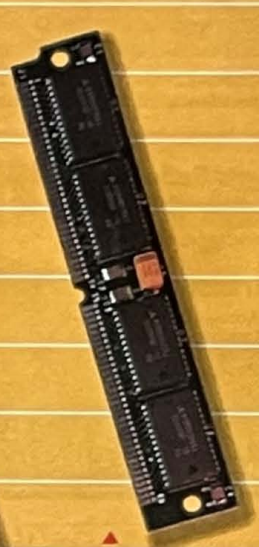

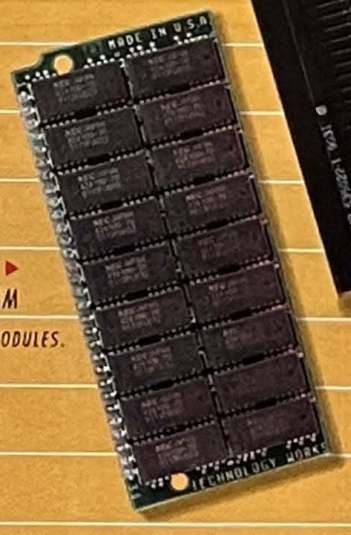

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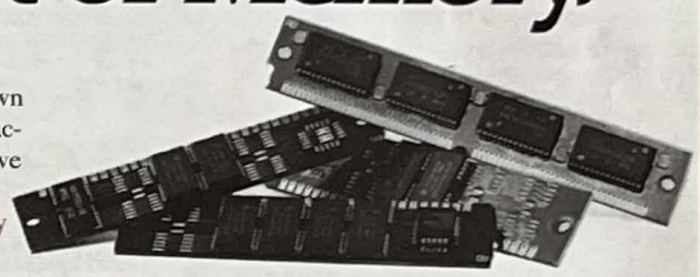

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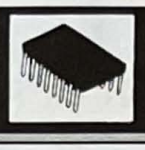

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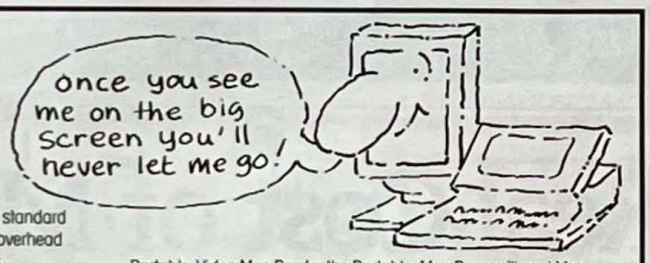

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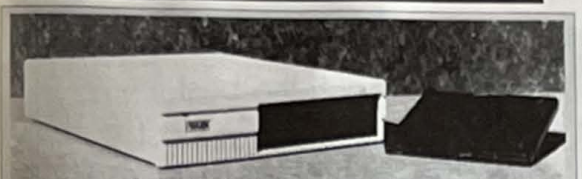

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Maya Macintosh Pie

Ingredients:
2 cups flour
1/4 teaspoon salt
2 tablespoons sugar
12 tablespoons very cold butter
Grated rind from 1/2 lemon
2 eggs
2 tablespoons ice water

Making the Pie:
Place flour, salt and sugar in a bowl. Cut the butter into small bits and add to flour mixture. Using fingers, cut in the butter until it has the texture of course commeal. Add lemon rind. Separate the eggs and set the whites aside. Beat the yolks with the water and add to the mixture, stirring quickly with a fork.

Take 1/4 of the dough and put it back in the refrigerator. The remaining piece will be the bottom crust.

8-12 MACINTOSH apples
1 tablespoon butter
1/2 cup brown sugar
1 tablespoon flour
1 teaspoon cinnamon

Roll out the crust between two pieces of wax paper. The crust should be as round as possible, and should fit in the pie plate with the edges hanging over. Carefully peel the wax paper off one side and lightly lay the paper back on, flip and remove wax paper from the other side. Place in the pie plate and carefully peel off the remaining paper.

Cooking the Pie:
Preheat oven to 400. Pare the apples and cut them into thick slices. One apple should yield only about 8-10 slices. Place the sliced apples into the crust. Dot the top with the butter. Sprinkle the brown sugar, flour and cinnamon over the top. Set aside.

Roll out the remaining dough between two pieces of wax paper. Peel the paper off as with the bottom crust. Using a sharp knife, cut into 1/2 inch strips. Place the strips on top of the pie in a criscross fashion. Any remaining dough should be cut away to be used for the edge of the crust. Use a fork to flatten the edges.

Brush the top of the pie with the leftover egg white and sprinkle lightly with some sugar. Place in the preheated oven for about 30 minutes. Watch the pie for the last 5 minutes (or so, depending upon your oven) When it is evenly browned, remove and cool before slicing.

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BUSINESS WATCH

- Industry news
- Market trends

Ashton-Tate/Borland deal is OK'd, but antitrust concerns are raised

A-T Mac products are still in limbo

By Shawn Tomlinson

Torrance, Calif. — The $439 million stock-swap merger between Ashton-Tate Corp. and Scotts Valley, Calif.-based Borland International Inc. has been approved by shareholders of both companies, but the U.S. Justice Department has asked for more time to consider whether the deal might violate anti-trust laws.

The government agency has until Oct. 11 to object on any grounds or to ask for an extension for its consideration. The deal between the two software developers was announced in July but not voted on until late September. If there are no new delays, they expect to finalize the deal by Oct. 14.

At the same time, Ashton-Tate has announced immediate cutbacks in its staff, which it claims are unrelated to the merger. The company, based here, said it is cutting its work force by about 100 employees, the latest in a string of cutbacks. This new cut, according to the company, was made to trim expenses and increase efficiency. Ashton-Tate now will have about 1,200 employees worldwide, although representatives of Borland and Ashton-Tate said more cuts will occur after the merger is complete.

When the merger is finalized, the Ashton-Tate name will disappear, replaced by Borland on all products, according to Jill Kramer, spokeswoman for Ashton-Tate. She said that the future of Ashton-Tate's four Mac products — Full Impact, FullWrite Professional, dBASE Runtime Plus and FullPaint — is still undetermined.

Dick O'Donnell, a spokesman for Borland, said the company's plans for the Mac products will be revealed after the merger.

"I'm assuming [Borland is] going to keep [the] Mac product line," said Peter Francis, industry analyst

See Borland, next page

Apple education sales up 25-30%

Strong year comes after major changes

By Dartanyan L. Brown

Cupertino, Calif. — Apple's education division, after a year of fighting off IBM Corp.'s market advances, brought home a 1991 unit sales increase "in the neighborhood of 25 percent to 30 percent," in the U.S. education market, according to sources.

Bernard R. Gifford, Apple's vice president of education marketing, declined to state the exact figures but did say that 25 percent growth was "definitely in the ballpark."

Apple's upbeat performance comes after a year in which the company "instituted more changes in a short time than ever before," according to Gifford.

Apple began 1991 by slashing more than half the resellers it authorizes to help sell to education customers (see MacWEEK, Jan. 22). This led some observers to predict that Apple was in danger of losing both dealers and market share to IBM.

"The channel changes we made gave us stronger, more-knowledgeable partners," Gifford said. "Rather than having our channel partners competing with each other, we have them facing our real competitors."

Burt Cummings, Apple's director of high-education marketing, said the positive sales news "gives [Apple] a sense of vindication" about the decision to cut its consultants.

Gifford said: "After reducing our [Apple education sales consultants] program from 800-plus to 300-plus sales consultants, we still increased our revenue by a fair percentage."

In addition to tightening its grip on its education channel, Cummings said Apple will institute a two-pronged approach for expanding its education market in fiscal 1991.

"For smaller campuses, we use broad market communications, like radio advertising, to direct sales traffic toward campus sales facilities or Apple authorized resellers," he said. "For larger campuses like UC Berkeley, we can focus on events, such as MacFests, to generate interest."

In the K-12 marketplace, price is the driving force, and according to Apple's Gifford, Apple has the right products at the right price. "The LC

See Education, next page

New math from Apple

Apple increased its unit sales by 25 percent to 30 percent in the U.S. education market in 1991, despite cutting more than half of its authorized education resellers. To expand sales in '92, Apple will:

- Increase its marketing at college campuses.
- Continue to attract sales in the K-12 market with its low-cost LC and Classic.

Former executive says Tidemark going under

By Mitch Ratcliffe

Newark, Calif. — Tidemark Corp., only months after introducing its multiplatform envelope printer, has all but ceased operations, according to a former executive. But another Tidemark executive denied that the company has gone out of business.

"[Tidemark CEO] Larry Plummer came in three weeks ago and announced that we were closing the doors," said Wes Richards, Tidemark's former vice president of sales.

Richards lost his position at Tidemark the same day Plummer announced the layoffs. "Two people are the whole company now," he added.

"Not true at all," said Joe Miller, vice president of engineering at Tidemark. Miller said the company has been reorganized. "We were a small company, and now we're even smaller."

Tidemark, founded in 1989, introduced its first product in May, the $1,195 Address Express envelope printer. The printer, manufactured by Texas Instruments Inc. in Temple, Texas, allows Macs and IBM PCs and compatibles to print envelopes from within almost any application.

A month after Tidemark's rollout, CoStar Corp. of Greenwich, Conn.,

NEVIN BERGER

introduced a comparable product, the $595 AddressWriter.

"We feel Tidemark priced themselves right out of the market," said Phil Damiano, president of CoStar.

Richards said that Plummer and Miller, with the help of a secretary and technical-support person, are attempting to keep Tidemark afloat until Address Express can be sold to another company.

"TI is the most likely candidate to take it over since it [does the manufacturing]," Richards said.

Miller confirmed that he and Plummer are the only members of the executive team who still work at Tidemark's offices. He said several staffers continue to work for Tidemark on a contractual basis. "We have no plans for Chapter 11 or 7 filing," he said.

Dave Liggett, Tidemark vice president of operations, is "actively involved with us in our plans with respect to Texas Instruments," according to Miller, who refused to elaborate on what his company's plans were concerning TI. Liggett was not available for comment. □

Move to Windows boosts CE share price

By Shawn Tomlinson

West Des Moines, Iowa — Investors in CE Software Holding Inc. may feel as if they've been riding a roller coaster lately.

The stock traded in July for less than $5. But last month, following the release of a new, multiplatform version of QuickMail and the announcement of DiskTop for Windows, it shot upward, hitting $10.25 on Sept. 25. Since then it has eased back, closing at $8.38 on Oct. 2.

Analysts and company officials attributed the stock's upward movement to a perception among investors that CE may be able to transfer the programming and marketing skills that have put it at the

See CE Software, next page

StockWatch

	10.02.91 CLOSE	WEEKLY % CHANGE
Apple	49.75	-1.49
SOFTWARE DEVELOPERS		
Adobe	53.13	3.16
Aldus	43.50	8.07
Ashton-Tate	16.25	8.33
Caere	18.50	6.47
CE Software	8.38	-18.29
Microsoft	87.00	-0.85
Symantec	63.63	-4.68
PERIPHERALS VENDORS		
CMS	3.75	20.00
HP	47.75	-3.54
Mass Micro	0.94	0.00
QMS	23.13	-0.54
Radius	6.88	1.85
RasterOps	14.88	-39.29
Sigma	6.75	1.89
STORAGE		
Conner	18.25	-8.18
Maxtor	4.94	6.77
Quantum	11.00	2.33
Seagate	8.25	-4.35
INDUSTRY INDICATORS		
Businessland	0.88	0.00
DEC	55.50	-0.45
IBM	101.13	-3.69
Motorola	58.63	-3.89
Sun	28.63	-2.55
Dow Jones	3012.52	-0.28

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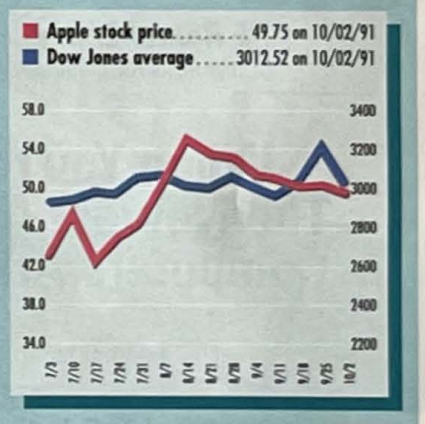

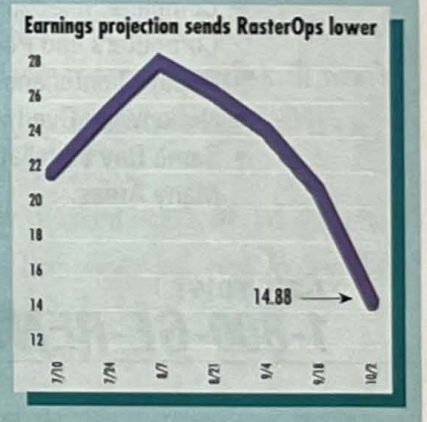

Sometimes the truth really does hurt, especially if you are a developer who has admitted that your current quarter sales now are expected to fall short of projections.

RasterOps Corp., having just made such an announcement, got its stock price slashed by a whopping 39 percent last week. The once-golden monitor stock closed last Wednesday at $14.88 a share.

CE Software

From previous page

top of the Mac utility and networking markets into the Windows arena.

"CE has the pre-eminent position in the Mac market," said Michael Sabbann, vice president of research and a financial analyst for Piper, Jaffray & Hopwood of Minneapolis. "Investors believe [the company] can take that knowledge and transfer it to Windows."

"I see a direct connection between the stock jump and our move to Windows," said Richard Skeie, president of CE Software Inc. "We're the first [E-mail software company] to be on all systems. We make it a no-brainer: Buy the package, and it takes care of you."

Skeie said CE Software will continue to transfer its utilities, such as QuicKeys, DiskTop and Alarming Events, to other platforms.

CE Software was founded in 1978 as an offshoot of a computer retail store that was "merged off" in 1987 and '88, leaving John Kirk, Don Brown and Skeie to pursue the software business exclusively. The company went public in 1990.

"The Windows environment is much larger than the Mac," said Sabbann. "Relatively few investors are aware of CE Software, and it's their belief that the company will have a large penetration into Windows." Sabbann also pointed out that if that happens, other investors will probably join in, sending stock values even higher.

"Not just anyone can move into the PC market," said Sabbann. "They have to take a close look at the competitive dynamics of the situation."

CE will need to bring more products over to Windows and do it relatively quickly, he said.

While he said he doesn't believe in announcing vaporware, Skeie said other Windows products are on their way from the company very soon. □

Nuvotech licenses Farallon technology

Sausalito, Calif. — After nearly two years of negotiations, Nuvotech Inc. last week reluctantly bowed to pressure from Farallon Computing Inc. and agreed to license Farallon's LocalTalk connector technology.

The agreement, which involves no royalties or other payments to Emeryville, Calif.-based Farallon, will not change the price of Nuvotech's TurboNet and TurboNet ST connectors, the products affected by Farallon's two patents, said a company representative.

Nuvotech's acquiescence, however, may be temporary.

The company will look for ways to create connectors that do not use technology specifically covered in Farallon's patents, such as surge protection, according to Nuvotech.

Nuvotech, based here, was one of the few remaining makers of LocalTalk for phone-wire connectors that had not bowed to Farallon's claims. □

Education

From previous page

has been the driver for us, along with the Classic," Gifford said.

According to Dale Spencer, vice president of marketing for Denver-based education research firm Quality Education Data: "If you look at it by districts, 21 percent of the school districts planned to buy Macs in '90 and '91. That jumped to 40 percent for the '91-'92 school year."

Despite friendly noises coming from the Apple/IBM alliance talks, in education, the two companies continue to aggressively compete with each other, Gifford said.

"It will take a while for us to see how the alliance will change our stance," he added, saying Apple had gained market share from IBM in 1991 and plans to continue that trend next year. □

MacWEEK index
WHAT PC USERS ARE BUYING

The following shows from which vendors customers plan to purchase new personal computers over the next 12 months. The data was gathered by surveying more than 3,000 U.S. organizations between May and July as part of Computer Intelligence's ongoing End-User Computing interview program. Responding organizations are broken down by company size.

Large (more than 500 employees)	Midsize (100-499 employees)	Small (fewer than 100 employees)
IBM Corp. - 34%	IBM Corp. - 29%	IBM Corp. - 21%
Compaq Computer Corp. - 9%	Compaq Computer Corp. - 8%	Compaq Computer Corp. - 10%
Apple - 6%	Dell Computer Corp. - 8%	Apple - 8%
Unisys Corp. - 6%	AST Research Inc. - 4%	Dell Computer Corp. - 3%
AST Research Inc. - 4%	Apple - 4%	
Zenith Data Systems - 3%	Everex Systems Inc. - 4%	
Everex Systems Inc. - 3%		

Source: Computer Intelligence.

Borland

From previous page

of personal software for Dataquest Inc. of San Jose, Calif. "It makes sense to have a presence in the Mac market."

Other analysts didn't agree, saying they believe Borland will dump the whole line immediately after the acquisition. Borland at one time marketed a series of Mac products, including the Reflex Plus database (see MacWEEK, June 18), Sidekick for the Mac, Eureka and TurboPascal. But the company withdrew from the Mac market in 1988.

"Ashton-Tate wouldn't have survived if it hadn't agreed to merge with Borland," Francis said. "It gave everybody — the stockholders and the venture capitalists — what they wanted. Nobody gets hurt, except the workers who may face layoffs."

Francis pointed out that while Ashton-Tate was once one of the top software developers in the industry, it fell drastically because it tended to announce and ship products before they were ready. "That did a lot of damage to its reputation," he said. □

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Network

From Page 1

build the 4- and 16-Mbps Token-Ring NuBus card using IBM's stable chip set. To ship in December, the card will replace Apple's current offering, which transmits only at 4 Mbps, sources said.

▸ **AppleTalk for OS/2 servers.** IBM will license the AppleTalk protocol stack and will use it to create an AFP (AppleTalk Filing Protocol)-compatible server that will run on OS/2-based servers.

Mac users logged into OS/2 servers will be able to access IBM network services the same as any DOS or OS/2 workstation could. Communications servers, database servers, routing and directory services on a Systems Network Architecture network will be made available to Macs through IBM's Advanced Peer-to-Peer Networking (APPN) protocol.

▸ **APPN for SNA•ps gateway.** As Apple announced with the June introduction of its SNA gateway, the company will add full APPN workstation capabilities to its product. SNA•ps currently supports a subset of APPN.

▸ **AS/400 services for Mac.** A future client to Apple's SNA•ps gateway will give Macintosh users a full graphical interface to the AS/400's file and print services. Currently, Macintoshes can access AS/400 services by mimicking a text-based terminal. Apple will also port its Data Access Language (DAL) to the AS/400.

▸ **Cross-platform management.** Apple's upcoming SNMP (Simple Network Management Protocol) agent for AppleTalk devices (see MacWEEK, Sept. 24) will work with IBM's NetView management station, Apple officials said. The SNMP agents will allow network administrators to troubleshoot, track and control some aspects of Macs and other devices, such as routers, alongside their IBM network devices.

Apple also will modify its SNMP agent to work with IBM's LAN Network Manager, which is based on the Open Systems Interconnection standard Common Management Information Protocol (CMIP).

While the companies cooperate on one level, "we will still continue to fight over the issue of the PS/2 vs. the Mac," said Bill Brown, manager of communications products for Apple.

Unlike those products that came out of Apple's alliance with Digital Equipment Corp., creations of this union will be produced and marketed by either Apple or IBM, not both.

"We are going to define all the things to make the Mac easier to use and a preferred client [in IBM enterprise networks]," said Jack Kuehler, president of IBM. IBM salespeople will become more aware of the Mac, but will not sell or market Apple's CPUs to IBM customers, he said.

"What we're really getting is less a stamp of approval [from IBM] than the removal of an impediment," said Apple's Brown.

In other networking news, Apple this week will preview its network dial-in software and System 7.0-compliant file and printer server to press and analysts (see MacWEEK, Sept. 17).

AppleTalk Remote Access will ship free with the PowerBook Macs when they are announced later this month; AppleShare Server 3.0 will ship next week for $1,195. AppleTalk Remote Access also will be made available to other Mac users for a nominal fee.

Third-party vendors Shiva Corp. and Cayman Corp. will announce support for the network dial-in software: Shiva, in its current products, such as the Netmodem/E, and Cayman, in a future product. □

Ventures

From Page 1

To be based somewhere in California's Silicon Valley, the company will be staffed by 300 to 400 engineers. The majority will come from Apple's Pink team, said Ed Birss, the Apple executive who is slated to become chief operating officer of the new company; other employees will be drawn from Mountain View, Calif.-based Metaphor Computer Systems Inc.'s Patriot Partners group.

When complete, Taligent's products will consist of two components. The first is a set of OS objects that will be built into the Mac OS, AIX and OS/2. These objects will be available for use only by IBM and Apple's operating systems; they will not be licensed to other companies, company officials said.

The second component will be an object-oriented operating system. This OS will be able to operate on any popular processor platform, including Motorola's 680x0 and Intel x86 chips, as well as processors based on IBM's Power RISC (reduced instruction set computing) technology. The new OS will represent a radical departure from traditional systems and will support new classes of applications not previously possible on microcomputers, Apple and IBM said, although they offered few details about the new capabilities.

Even more uncertain is how the new OS will be licensed. It is already clear that there will be several different versions of it with various levels of compatibility with one another and the Mac and OS/2 environments. Apple and IBM have both said the operating system will be made available to any company that wants to include it with its CPUs, but which version will be licensable and by whom remains to be determined.

▸ **Kaleida.** Named after the Greek words for "beautiful form" as well as the popular toy, Kaleida will focus on establishing standards for sound, graphics, animation and video on computers. Although it will license Apple's QuickTime media technology, Kaleida will develop its own data specifications and formats for licensing to the industry, according to Apple. Because the new company will have QuickTime as a resource, Apple hopes that whatever Kaleida develops will be compatible with QuickTime. Kaleida technologies aren't expected to be available for at least a year.

Kaleida also will be responsible for encouraging third-party companies to create media content using its technologies.

Both ventures, which will be jointly and equally owned by Apple and IBM, require approval by the U.S. Federal Trade Commission. Approval is expected in 30 to 90 days. □

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If you don't subscribe to CIS, sign up with Zmac by following these directions.

First, call (800) 635-6225 (voice) to find your local access number.

Second, set up your modem and telecommunications software with the following standard Macintosh settings: 8 bits, one stop and no parity.

Dial your local access number. When con-nected, press **RETURN**.

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Alliance

From Page 1

"I think it will be good for both sides," said Richard Shaffer, publisher of the Technologic Newsletter in New York. "This is not romance; this is business."

▸ **Networking.** In the near term, customers and Apple will benefit from improved integration of Macs within IBM networks. As part of the agreement, connectivity products will be delivered starting this year.

But more importantly, analysts said, IBM's endorsement will provide Apple with an entrance into the corporate establishment that has ignored Macs.

"The stamp of approval in the IBM-enterprise world is very important to us," Apple CEO John Sculley said.

▸ **Open systems.** Under the agreement, Apple and IBM will license the PowerOpen environment and PowerPC processors to other manufacturers. Taligent also will license its software environment.

"The potential is enormous," said Shaffer. "There is no technical reason why this alliance cannot systematically replace the [IBM] PS/2 in five years with a compatible, open but proprietary computer."

However, new machines from Apple and IBM that take advantage of PowerPC, PowerOpen and object-oriented technologies won't be available until late 1993 at the earliest, company officials admitted. "Most of the impact will be in the latter half of the decade," Sculley said.

Michael Slater, editor of the Microprocessor Report in Sebastopol, Calif., said: "There's nothing to take into account for buying decisions for at least two to three years."

Pending government approval, IBM President Jack Kuehler (left) and Apple CEO John Sculley made their technology alliance official last week, climaxing months of intense negotiation. New machines based on their joint efforts won't be ready until late 1993 at the earliest, however.

▸ **Competition.** IBM President Jack Kuehler said that the two companies would continue to compete vigorously, as well as pursue different market segments.

"While IBM and Apple talk about areas of common opportunity, please don't think, not even for one nanosecond, that we will back off from direct competition, with our own systems, in the open market," Kuehler said.

Sculley was coy about Microsoft CEO Bill Gates' conspicuous absence from the lineup of industry leaders supporting the alliance. "We certainly hope that Microsoft, which is really a great applications developer, will find these platforms as exciting to develop on as some today."

Sculley said the agreements signed last week would be forwarded to antitrust regulators at the U.S. Federal Trade Commission. Apple and IBM officials were confident that government approval would be forthcoming.

Apple and IBM also announced a cross-license of patent and visual displays, including a limited license to the Macintosh visual display. □

Five initiatives stemming from alliance

▸ **Taligent.** Product time frame: mid-1990s.

This joint-venture company will develop an object-oriented operating system, based on the Pink OS that Apple has been developing for the past four years. The new object-oriented OS will be available to the industry for licensing.

▸ **Kaleida.** Product time frame: mid-1990s.

Also a joint venture, Kaleida will develop multimedia platforms, providing standard data formats for developers to target in crafting their products.

▸ **Enterprise networking.** Time frame: starting in December.

New and enhanced connectivity products will make Macs easier to integrate into corporatewide IBM networks. As an initial step: Apple got IBM Corp.'s Token-Ring; IBM received AppleTalk.

▸ **PowerPC.** Time frame: two to three years.

Apple, IBM and Motorola Corp. will cooperate to produce a new family of RISC (reduced instruction set computing) chips.

▸ **PowerOpen.** Time frame: two years.

This new rubric will encompass operating systems from both Apple and IBM that combine a new version of AIX, IBM's Unix, with elements of Apple's A/UX. PowerOpen, which will run on IBM's RS/6000 workstations and Apple's PowerPC RISC-based systems, will run software written for the Mac OS as well as for AIX.

Seybold

From Page 1

will be able to provide conversion calls between RGB (red, green, blue) and CMYK (cyan, magenta, yellow, black) or other color spaces, provide calls to various color-management systems, offer gamma checking facilities, provide links between components and offer ready access to device profiles, Murch said.

Adobe Systems Inc.'s PostScript Level 2, Eastman Kodak Co.'s ColorSense color-management system and Electronics for Imaging Inc.'s EPORT appeared to be emerging as leading contenders for handling color on the desktop.

▸ **Future media.** Two desktop publishing trailblazers, Aldus Corp. President Paul Brainerd and Adobe CEO John Warnock, used keynote speeches to outline their visions of publishing. Brainerd gave a technology demonstration of software he dubbed "Multimedia PageMaker," which lets users quickly assemble "rich documents" incorporating text, graphics, video, sound and animation. For quick navigation, the demo software provided a 3-D exploded view through which users could move between media types.

Warnock's demonstration focused on Interchange PostScript (IPS), a technology for exchanging formatted documents across platforms and operating systems. Based on the Illustrator 3.0 file format, IPS uses Adobe's Multiple Master fonts to match font metrics between documents on different platforms. Viewer applications to display and print IPS documents also are central to the approach. Warnock said the technology may be available to users within a year.

▸ **Printers and scanners.** Apple CEO John Sculley introduced the LaserWriter IIf and IIg laser printers and Apple OneScanner at the show's opening session. He predicted that the scanner's ease of use and the printers' improved halftoning technology will encourage widespread use of photographs in desktop publishing.

"Photography in our documents is going to become commonplace," Sculley said.

In addition, Adobe demonstrated its new Adobe Type 1 Coprocessor, which promises to render fonts 25 times faster than RISC (reduced instruction set computing)-based printer controllers. Adobe officials predicted that the font coprocessor will appear in printers beginning early next year.

▸ **Fonts.** Adobe showed its first Multiple Master fonts with user-adjustable weights and widths (see story, Page 24). Microsoft Corp. carried the banner for TrueType, with company officials extolling the format's virtues at every font session at the show. Type vendors such as Letraset and Agfa Compugraphic showed their support for the format by displaying their first TrueType fonts. But Apple's lack of enthusiasm for TrueType seemed palpable.

"Where's TrueType?" asked Rob Auster, a printer analyst with BIS Strategic Decisions in Norwell, Mass. "John Sculley introduced the new LaserWriters without even mentioning there's a TrueType rasterizer in them. Then he said he expects serious users to choose Type 1. Does that mean TrueType users aren't serious?" □

Platforms

From Page 1

lies will run the Mac operating system and, eventually, the new object-based system to be developed by the new Taligent joint venture on the basis of Apple's Pink project (see story, Page 1).

Buyers of Apple's high-end RISC systems, as well as of IBM's RS/6000 workstations, will have yet a third OS option: a new implementation of Unix that will combine a new AIX kernel from IBM with A/UX interface technology.

▸ **Mac OS.** A descendant of System 7.0, with multimedia and other extensions from Apple and the new joint ventures, will run on both processor platforms. Key parts of the current OS, such as Finder 7.0 and QuickDraw, are already written in high-level languages and will need only to be recompiled to run on the PowerPC; other elements will have to be rewritten or run in emulation mode.

Standard Mac applications will run on the PowerPC-based systems, either in emulation mode or in new versions developed for the new processor. Apple, sources said, has developed some "pretty exciting" technology that will provide emulation with minimal sacrifice in performance.

▸ **PowerOpen.** A loosely defined term covering products that will be marketed by both companies and licensed, at least in part, to third parties, PowerOpen is an open-systems operating environment that both companies will offer for their RISC-based workstations and servers. IBM is expected to focus on high-end applications, while Apple concentrates on smaller systems.

The heart of the new system will be a future, slimmed-down release of AIX, IBM's Unix, which will be built on the Open Software Foundation's OSF/1 Unix standard. Apple, which will probably market PowerOpen as A/UX 4.0, will contribute A/UX technology that makes it possible to run Mac OS applications in the Unix environment. Users will be able to choose between the Mac and OSF/Motif interfaces.

For Apple customers, PowerOpen will mean access to some 4,000 applications written for AIX; IBM, in turn, will now be able to use the lure of the Mac interface and applications to boost sales of its RS/6000-based workstations.

▸ **Pink.** The murkiest element on the Mac horizon is the wholly new, object-based OS code-named Pink, which will now pass to Taligent (see story, Page 1). Elements of Taligent's technology will be incorporated into the Mac OS, AIX and OS/2, the companies said. But the object-oriented system also will be the basis for a wholly new, platform-independent operating system.

"Our intention is for it to run on all high-volume platforms," said Ed Birss, the Apple executive who is expected to become chief operating officer of the independent company. Last week's announcement said it would work on 680x0 and Intel x86 systems, as well as the Power RISC family, but sources said RISC might be required to take full advantage of it. Applications written for the Mac OS will run under at least Apple's version of the Pink system, Birss said.

Apple officials last week were vague about the capabilities of the Taligent OS, but emphasized that it would dramatically simplify development and customization of software. Sculley said it would allow MIS teams to develop critical inventory and accounts receivable programs, for example, "in a matter of weeks," instead of the years now typically required.

Sculley said Apple would begin showing Pink technology to developers at the end of this year and that it expected product to hit the market by mid-decade. □

RISC OS: Microsoft shows, Apple tells

Mac users got a few tantalizing details last week about the RISCs in their future, but Windows fans were treated to a working, if limited, demonstration of the new processortechnology.

Microsoft unveiled Windows NT (New Technology), a 32-bit operating system for RISC (reduced instruction set computing) machines as well as 386- and 486-based systems. The occasion was the official introduction of the R4000, a new 50-MHz RISC processor from MIPS Computer Systems Inc. of Sunnyvale, Calif.

Systems incorporating the R4000 and Windows NT, as well as a version of Unix, are due by mid-1992.

Windows NT is designed to run existing Windows software without modification, but only in emulation mode at about 386 speeds. No major productivity programs were shown in last week's demonstration, however. Under the hood, NT offers such "industrial-strength" features as pre-emptive multitasking, integrated networking and multiprocessing support.

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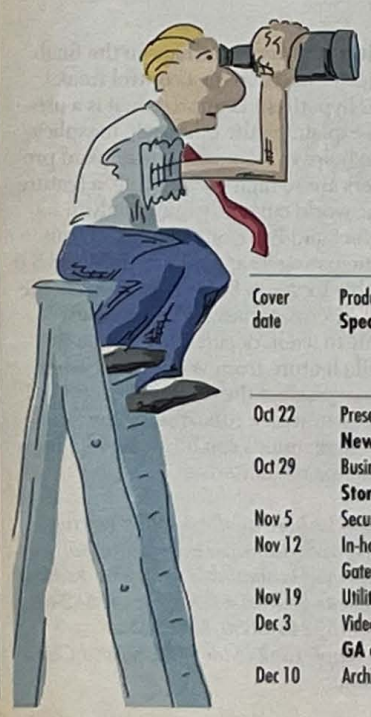

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A Classic case of server envy

John Sculley and IBM's Jack Kuehler last week proudly displayed the contractual consummation of what many, just a few months ago, would have labeled an unnatural act. The sight will undoubtedly rank right up there with the image of toppled Communist icons as a signature portrait of the entire year.

But, as analysts were quick to trip over each other to point out, there aren't any products here, and there won't be any for a long, long time. Meanwhile, this is October, the month that Apple completes the grand overhaul of its product line that began last year about this time with the introduction of the "Mac Lite" line. And whenever there are imminent product introductions, the steady leak of information turns into a torrent.

The flotsam and jetsam this year included some printed materials Apple cooked up for its sales staff. This sort of thing is dependably entertaining. For example, here we find that Apple rates the new Classic II as about twice as fast as the Classic.

A moment's reflection will reveal that this is just a sneaky way of admitting that the Classic II is only a little more than half as fast as the SE/30 it replaces in the product lineup. In light of the Classic II's low price relative to the SE/30, this could be considered a prime example of getting just what you pay for. This rationalization is likely to be poorly received by the world's network administrators, many of whom have for some time now depended on the SE/30 as a fast, inexpensive AppleShare server workhorse.

Endangered upgrade list. As is often the case when new CPUs are announced, some of the existing upgrade options vanish at about the same time. Thus the demise of the SE/30 on Oct. 21 casts the future of Apple's SE-to-SE/30 upgrade in grave doubt.

If true, this would be particularly disturbing news to those who have been waiting, some for several months, for Apple to fill orders for the upgrade.

Also on the short list of upgrades soon to be discontinued is the backlit display upgrade for the Mac Portable. This one is scheduled to be discontinued Oct. 16, so if your hardware plans include the acquisition of the new screen, call now. If you're lucky, operators will be standing by.

Cache compatibility capers. One of the small prices to be paid for being the first on your block with the newest Mac with the most recent CPU is the inevitable conflict with a certain number of existing applications. In the case of Macs running the 68040, most of the problems are related to software incompatibility with the chip's cache, a situation familiar to many Radius Rocket accelerator users.

Apple is maintaining a list of compatible applications (more than 350 at last report) and of course has developed a solution for those applications that aren't yet available in '040-friendly versions.

The Quadras will ship with a control panel that lets users turn off the '040 cache, but not on an application-by-application basis. Apple is proud of its efforts to stay on top of this problem. However it is undoubtedly somewhat less proud of the fact that turning off the cache with the control panel will yield performance roughly equivalent to a lowly IIci.

Scripting no more. Perhaps in the final analysis power users are just control freaks. While this hypothesis is unproven, it is a useful tool in explaining the otherwise inexplicable. It also helps explain why power word processor users are so high on scripting, a feature in the Mac world currently found only in WordPerfect and Paragon Concept's Nisus. Those anticipating its appearance in Word 5.0 can probably forget it. Sources indicate to the Knife that Microsoft has, for reasons best known only to itself, decided to exclude this high-profile feature from Word 5.0, leaving its Windows product the only Microsoft GUI word processor with a robust scripting feature. Of course, minds can be changed, just as features can be reinstated. □

Although the blue model is still awaiting approval from higher ups, the traditional MacWEEK mug is available now. The Knife is waiting to hear your insider tip at (415) 243-3500, fax (415) 243-3650, MCI (MacTheKnife), AppleLink (MacWEEK) and CompuServe/Zmac.

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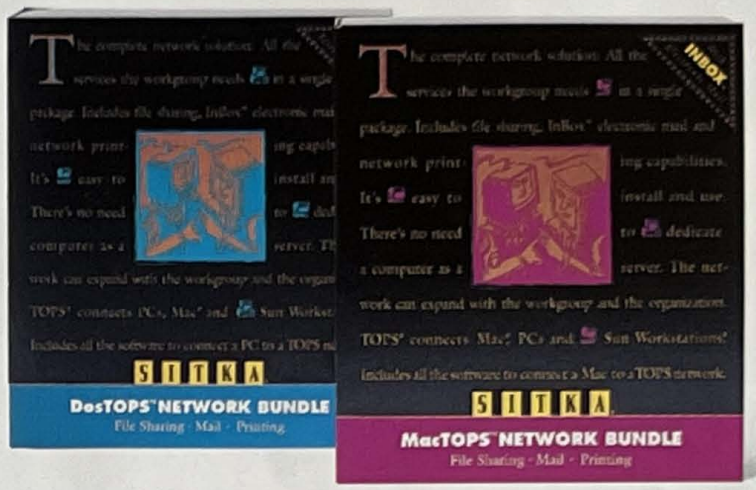

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